RELIGION, SOCIAL CAPITAL, AND HEALTH AMONG RECENT IMMIGRANTS TO THE UNITED STATES

by

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ABSTRACT

That the social networks to which a migrant belongs can have powerful effects on his or her behavior and health is widely accepted within the field of sociology. The causal pathways through which such networks affect health, however, are not as clear. Drawing on sociological theories of religion, health, and migration, this study explores the ways in which the social networks generated via religious involvement change over the course of the migration process and the effects of such changes on the physical and mental health of the migrants themselves. Using the first wave of Princeton University's New Immigrant Survey, this project examines changes in religious service attendance and health in a nationally representative sample of recent immigrants to the United States. The results show a clear decline in religious service attendance upon arrival in the United States, but the subsequent effect on health is less clear and varies in concert with a variety of individual and contextual factors. Theoretical explanations for these results are discussed with respect to policy implications and future research directions.

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CHAPTER I

IMMIGRATION, RELIGION, AND HEALTH: RESEARCH QUESTIONS AND THEORETICAL BACKGROUND

Introduction

The passage of the Immigration and Naturalization Services Act of 1965 marked a shift in American immigration policy, abolishing the national origins quotas that had previously favored Western Europeans over immigrants from other parts of the world. The new system, which focused primarily on immigrants' skill sets and family ties, opened the door to arrivals from Africa, Asia, and Latin America. The fact that a growing portion of the United States' immigrant stock hails from places other than predominantly Christian Western Europe has contributed to its growing religious and cultural pluralism. There are more than four times as many immigrants (17%) who identify as a member of a non-Judeo-Christian faith as there are native-born Americans (4%) who identify as such (Jasso et al., 2004), just as there are more immigrants who report no religious affiliation (15%) than there are native-born who report the same (12%) (Jasso et al., 2004).

In addition to being more religiously diverse than the native-born, immigrants to the U.S. may differ across several measures of health as well. Though still a matter of some debate, substantial evidence suggests that immigrants may be less likely than

native-born Americans to suffer from heart disease, hypertension, obesity, and certain types of cancer, all of which are likely contributors to immigrants' lower risk of mortality (Cunningham, Ruben, & Narayan, 2007). Such advantages, when supported by empirical research, are often attributed in part to immigrants' personal characteristics and in part to environmental exposures in their areas of origin and/or their areas of destination (Cunningham, Ruben, & Narayan, 2007). In spite of voluminous research on the subject, however, a definitive explanation for the so-called healthy migrant effect—that is, the tendency of immigrants to the U.S. and other developed countries to exhibit better health than the native-born population—remains elusive.

For many years, scholars in the fields of immigration, religion, and health were all equally guilty in overlooking religion's role in the various stages of the migration process as well as its potential as a determinant of immigrant health. In recent years, however, a growing desire to understand the significance of religion and community in the lives of post-1965 immigrants to the United States has been the impetus for a number of ethnographic studies of immigrant religious communities in various cities around the country (see Badr, 2000; Chai, 1997; Sullivan, 2000, for examples). Although such studies provide detailed descriptions of the communities of interest and the sociocultural context in which they exist (and in some cases even touch on health and health behaviors as well), their findings are typically not generalizable and often lack the systematic analysis necessary to make comparisons between different groups. This overreliance on qualitative research is primarily the result of data

limitations (Jasso et al., 2004). Until recently, large-scale, representative surveys of post-1965 immigrants that included questions about religious affiliation and health status were unavailable, a fact that severely limited the types of analyses that could be performed (Jasso et al., 2004). Furthermore, the data that were available in the past were far from ideal. Many sources failed to distinguish between different types of immigrants, effectively treating undocumented immigrants, legal permanent residents, and temporary migrants as though there were no differences between them (Jasso et al., 2004). No effort was made to collect data on the qualifications of immigrants for the types of visas available through U.S. immigration law, and information on premigration experiences was sparse. The New Immigrant Survey (NIS), however, addresses many of the deficiencies common of previous data by providing a considerable amount of information on a nationally representative sample of legal permanent residents. The present study, which seeks to use the information available in the NIS dataset to examine the changes immigrants to the U.S. experience during the migration process, has three primary research aims.

The first such aim, which will be addressed in Chapter III, is to examine the extent to which religious service attendance patterns change over the course of the migration process. While migration has traditionally been viewed as an experience that heightens religious consciousness (and, by extension, is thought to increase religious service attendance), more recent research has challenged this notion, arguing instead that migration constitutes a disruptive event that is likely to lead to a decrease in religious service attendance.

The second aim, which constitutes the focus of Chapter IV, is to test the veracity of the healthy migrant effect across a variety of health outcomes while also assessing the extent to which immigrant health changes over the course of the migration process. Although considerable effort has been devoted to explaining the healthy migrant effect, comparatively little research has sought to incorporate multiple health outcomes into the same study. Moreover, few studies have considered the possibility that the immigration process itself may have an effect on migrant health. Finally, an overreliance on subjective outcomes such as self-rated health has raised concerns about the reliability and validity of the findings in question.

The third and final aim, to which Chapter V is devoted, examines the association between religion and health with a focus on how each changes as a result of the migration process. Additionally, this section incorporates several measures of social capital in an attempt to determine whether the hypothesized relationship between religion and health persists after controlling for other measures of social engagement.

Finally, Chapter VI summarizes the findings of the previous three chapters, noting the implications and limitations of each. One limitation in particular that will be revisited both in Chapter VI and periodically throughout the project is that the findings reported here are culturally bound. In other words, the extent to which such findings apply to immigrants to countries other than the United States is unknown. Finally, potential directions for future research on religion, immigration, and health are also discussed.

Background and Significance of Research

Given that immigrants make up nearly 13% of the population of the United States (Holmes, 2006), understanding the determinants of migrant health should be a top priority for demographers and medical sociologists. And though the sheer breadth of the literature on migrant health indicates that just such an emphasis has been in place for some time, there appears to be little consensus as to what the primary set of determinants might be (Davies, Basten, & Frattini, 2006). Predictors such as socioeconomic status (SES), area of residence, and acculturation have been considered, but the effects of each tend to vary based on contextual and individual factors (Cunningham et al., 2008).

Consider, for instance, the Hispanic Paradox, the (admittedly disputed) tendency of first-generation migrants of Hispanic origin to enjoy health outcomes that belie their relatively low SES (Markides & Eschbach 2005). In addition to the spirited debate over whether such a paradox exists at all (see Crimmins et al., 2007), there has been further discussion regarding what sorts of individual characteristics make a given migrant most likely to enjoy the health benefits associated with said paradox. Markides and Eschbach (2005) found wide variation in health differentials depending on which populations were examined and noted that evidence of a Hispanic Paradox was strongest in men, migrants who were born in Mexico and individuals of advanced age. In other words, the issue of whether or not a given factor acts as a determinant of migrant health has become less a simple question of yes or no than a question of for whom and under what circumstances.

One possible determinant of migrant health that has received increased attention in recent years is religion. Researchers are beginning to examine the effects of religiosity on the physical and mental health of immigrants to the United States, and their findings have shown a positive relationship between religiosity and mental and physical health. Cadge and Ecklund (2007) found religious behavior to be negatively associated with depression and psychological distress, while Shapiro (2011) found a positive relationship between religious behavior and overall self-rated health.

Theoretical explanations of this phenomenon, which are not solely applicable to immigrants, are at least twofold and vary depending on the aspect or aspects of religion emphasized in a given study. Those who focus on the effects of religion on individual-level psychological functioning often highlight religion's ability to provide immigrants with the resources necessary to deal with the stressors unique to the migration process. Leaving one's home and adjusting to life in a new country, which may also involve overcoming language barriers, searching for a new job, and experiencing prejudice and/or discrimination, is undeniably stressful (Bhurga & Gupta, 2010), and a belief that said stressors are all part of some divine plan may provide considerable comfort. Meanwhile, those who focus on religion as a social behavior often point to participation in a religious community as an effective way to combat the social isolation that many migrants report feeling upon arriving in the United States (Shapiro, 2011). Individuals who attend religious services regularly, for example, tend to have larger social circles and more frequent contact with friends than individuals who do not (Ellison & George, 1994). Along similar lines, being part

of a religious community may facilitate access to employment opportunities, healthcare providers, and the like.

Although recent literature in this vein represents considerable progress in understanding the role of religion as a determinant of migrant health, many such studies must be considered in the context of at least two significant limitations. First, many studies focused on one specific ethnic group, often from a specific country of origin (e.g., Noh & Avison, 1996). As a result, the extent to which these findings are applicable to the immigrant population as a whole is unknown. Second, most studies that examine the effects of religious behavior on migrant health focus on health outcomes that are either entirely physical or entirely psychological (see Kim et al., 2012 for examples). Choosing an outcome of interest is no small matter, as whichever outcome is chosen effectively sets the scale on which the effects (both positive and negative) of the independent variables will be interpreted (Pearlin & Bierman, 2013). This project addresses limitations of previous research by using the nationally representative NIS dataset to explore the relationship between religious behavior and health across several different health outcomes.

The balance of this chapter describes the conceptual and theoretical underpinnings of three of the key elements to be addressed in this project, namely religion, social capital, and health. The following sections define each within a sociological context, noting the theoretical connections between them and the extent to which each is applicable to the larger issue of immigrant health.

Defining Religion in a Sociological Context

Despite the efforts of those who study the sociology of religion, a simple, universally agreed-upon definition of religion remains elusive. Some, working in the tradition of Emile Durkheim (1997 [1897]), analyze religion as a social institution with particular interest in its interactions with other social structures. Others, such as Berger (1967), focus on the way in which religion imbues ordinary objects with profound symbolic significance and contributes to an individual's understanding of his or her place in the universe. This fundamental question of whether religion should be seen as an institution or as a set of subjective beliefs (or some combination of the two) has only intensified as sociologists have sought to incorporate religiosity into quantitative models. Indeed, one of the major challenges associated with studying religiosity as an independent variable has to do with its conceptualization and operationalization. Religious practices and beliefs are highly subjective and vary widely even within a single tradition. The operational definition of religiosity is of particular concern to those seeking to quantify the relationship between faith and health, as similar studies have been shown to produce different results depending on how religion was measured in one study vis-à-vis another (Smith & McCullough, 2003).

Aside from simple grouping by denomination, the most common means of classifying and/or analyzing the aspects of a given religion involves separating them into two domains: one that encompasses the comparatively private aspects of religion, and another that encompasses those that are more visible. The former, which is

more or less analogous to the popular concept of being "spiritual," encompasses such ethereal concepts as one's relationship to God, one's place in the universe, and such behaviors as prayer, meditation, and a feeling of closeness to God. The latter category, for which "religious" or "organizational religion" is sometimes used as a catchall, is composed of church attendance, involvement in voluntary associations, and participation in activities outside of formal services (Hill & Pargament, 2008). Although the religious/spiritual paradigm is generally accepted and widely used, recent research has encouraged those studying mental and physical health to move beyond the traditional either/or viewpoint and reframe the discussion in less polarizing, more nuanced terms (Cotton et al., 2006; Hill, 2003).

This project seeks to contribute to just such a discussion, eschewing the larger religion/spirituality debate by placing religiosity within the context of social capital, a term social scientists use to describe the level of social connectedness within a given community. Research has frequently shown social capital to be associated with improved mental and physical health (Kawachi et al., 1999; Kawachi & Berkman, 2001), a relationship that is thought to hold true for immigrant communities as well as the native born (Kunitz, 2004). And while religion could, admittedly, be conceptualized in any number of ways, this project will focus exclusively on its social aspects, particularly its ability to contribute to serve as a repository for social capital for those who attend religious services frequently and/or belong to a religious congregation.

Focusing only on the social aspects of religion—specifically, frequency of

religious service attendance and belonging to a religious congregation—has several advantages. First, it will eliminate the sort of confusion that has plagued studies on religion and health in the past, wherein a failure to properly and consistently categorize religious behaviors had led to contradictory findings (see Smith & McCullough, 2003, for more examples of the ways in which idiosyncratic operationalization of religion can influence results). Second, frequency of religious service attendance, while admittedly subject to recall and desirability biases, is less subjective than the Likert scales that are often used to measure concepts like religious salience or spirituality. One either attends religious services or one does not; there is less room for ambiguity in attendance than there is in other measures of religiosity—although, admittedly, respondents to tend to overestimate their level of religious activity when self-reporting (Hadaway, Marler, & Chaves, 1998; Presser & Stinson, 1998). Third, focusing on religious attendance allows us to track changes in a concrete religious behavior both before and after a major life event. In this case, the data allow us to compare premigration religious service attendance with postmigration religious service attendance, which adds a longitudinal element to the study in addition to answering questions about the effect of migration on religious service attendance. Finally, the NIS data contain a number of measures that can be used to measure nonreligious social capital, which allow us to control for the effects of other forms of social capital while testing for a main effect of religious service attendance on health.

While some might argue that concentrating on the social aspects of religion at the expense of spirituality effectively ignores the one element that makes religion unique as a social institution, we feel that breaking religion down into its component parts represents an important step in understanding the pathways through which faith affects—and is affected by—health. Furthermore, conceptualizing religion as a repository of social capital will allow us to address the question of whether social capital generated in a religious context is effectively different from that via involvement in other voluntary associations, one of the many social capital-related issues to which we now turn.

What Is Social Capital?

Although interest in social capital and its various applications has increased in recent years, it remains a highly complex and widely disputed concept within sociological research. Some, such as Fine (1999), argue that the concept of social capital is somewhat vague and indiscriminate, while others contend that the means by which social capital is generated and/or maintained are yet to be clearly identified (Hayes & Dunn, 1998). In spite of—or perhaps because of—these shortcomings, research on social capital and its applications has continued apace and become increasingly sophisticated over time. And though a comprehensive discussion of social capital and its various conceptualizations lies beyond the scope of this paper, a brief examination of the ways in which it has been defined is nonetheless helpful in establishing participation in a religious community as a form of social capital.

According to Coleman (1988), social capital is "not a single entity but a

variety of different entities with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors—whether persons or corporate actors—within the structure" (p. 95). Portes (1998) highlights essentially the same aspects of social capital in his definition, arguing that it refers to "the ability to secure benefits through membership in networks and other social structures" (p. 6). These two elements of social capital are both widely accepted and of particular interest to the discussion of religious attendance as a form of social capital. In addition to Coleman and Portes, Bourdieu and Putnam (1986 and 1993, respectively) conceptualize social capital as being tied in one way or another to social structures, social organizations or institutionalized relationships. Putnam in particular has emphasized the importance of participation in voluntary associations as a means of creating and maintaining social capital.

Given the importance of associational life in these conceptualizations of social capital, we can infer that social capital exists at least in part outside the individual and would therefore be difficult to generate or benefit from in a state of social isolation. As for the second element, there is general agreement that social capital is inherently action-oriented. Coleman (1990) views social capital as able to "[make] possible the achievement of certain ends that would not be attainable in its absence" (p. 302), while Putnam (1993) notes its ability to "improve the efficiency of society by facilitating coordinated actions" (p. 10).

Of course, the relatively uncontroversial notion that being part of a large social network offers advantages that might not be available to someone without such

connections belies the complexity of social capital and the challenges associated with measuring it. Everything from involvement in community affairs to knowledge and trust of one's neighbors fits under the umbrella of social capital, and the ongoing failure to settle on a widely applicable definition has contributed to a body of literature that is somewhat lacking in terms of definitive conclusions (Moore et al., 2005). On the other hand, the ambiguity of social capital as a theoretical construct has contributed to its versatility; virtually any social institution can be examined from a social capital viewpoint, as we shall see below.

Religion as a Form of Social Capital

To the extent that social capital is based on bonds formed by autonomous individuals within social organizations for the purpose of facilitating coordinated actions, religious congregations ought to be significant repositories of social capital. Religious affiliation is the most common form of association in America today (Smidt, 2003), and individuals who attend church regularly report having wider social circles and more frequent contact with close friends (George & Ellison, 2002). The relationship between religious participation and social capital is not lost on Putnam (2001), who notes that "faith communities in which people worship together are arguably the most important repository of social capital in America" (p. 66). Furthermore, participation in religious organizations is considered an acceptable means of evaluating the density of social networks (Kawachi, Subramanian, & Kim, 2008).

That religion as an institution generates social capital is hardly controversial at this point (see Putnam, 2000; Smidt, 2003). An issue that has yet to be resolved, however, has to do with whether the social capital generated by religious involvement is in any way different from the social capital generated by involvement in other voluntary associations. In other words, to what extent are the benefits one receives from joining a religious congregation comparable to those received from joining a trade union?

The notion that social capital produced in a religious context is in some way different from or even superior to social capital generated in other contexts is not without its backers. Supporters of this position (i.e., Smidt, 2003), argue that involvement in religious life (such as frequent religious service attendance) might be particularly conducive to the generation of social capital due to its ability to encourage a feeling of trust and an expectation of reciprocity amongst individuals who share the same faith, two components of social capital that are necessary to encourage individuals to work together to accomplish collective goals (Putnam, 1995). This is not to say that other social institutions are not capable of fostering trust and reciprocity among their members, only that religious institutions are particularly well suited for doing so. Interpersonal relationships that evolve within a religious context are often characterized by frequent face-to-face interaction, which is conducive to developing trust. Additionally, religious communities are uniquely potent in their ability to insist on conformity to norms of reciprocity and to enforce sanctions when members violate such norms. Virtually all voluntary associations have the power to

punish antisocial behavior, but only religious groups have the power to attach supernatural significance to said punishments.

Secondly, most religious doctrine contains some sort of imperative requiring that the faithful take care of those who are less fortunate, which manifests itself in various forms of volunteerism and community involvement. Most congregations report a high level of concern regarding the quality of life of those living in the community, and it is therefore normal or even expected for congregations to be involved in providing some sort of community or social services (Cnaan, Broddie, & Yancey, 2003). Moreover, churches tend to be more effective in terms of recruiting volunteers than virtually any other social institutions, and the frequency with which an individual volunteers is highly correlated with his or her church attendance (Campbell & Yonish, 2003). This strong link between religious participation and volunteerism supports the theory that social capital generated in a religious context is qualitatively different—perhaps more action-oriented—than social capital generated via participation in other associations.

Third, religious institutions have for the most part remained a vibrant part of American life even as other voluntary associations have declined in both membership and influence. While trade unions and professional associations once served as significant repositories of social capital, particularly for blue-collar workers, the widespread outsourcing of manufacturing jobs has in many cases left them a shadow of their former selves (Verba et al., 1995). Religious congregations, in contrast, still offer members an opportunity to form relationships with others and even exercise

leadership skills, a fact that has led some to argue that religious congregations have supplanted trade unions as the most accessible repository of social capital for working-class Americans. As Coleman (2003) noted, "a blue-collar worker in America is more apt to gain opportunities to develop and practice civic skills in church than in a union" (p. 35). Although the fact that Americans have maintained their involvement in religious groups even as other associations have deteriorated does not necessarily support the notion that religious social capital is different from other forms of social capital, it could be indicative of a differential in availability.

Finally, some theorists argue that the limitations exclusive to religious social capital (or at least more pronounced in religious social capital) set it apart from forms generated via other means. Local religious groups, for example, are often hesitant to work closely with secular organizations (Coleman, 2003), a fact that limits the extent to which social capital generated in a religious contexts can be utilized outside one's religious community. Further limiting the fungibility of religious social capital is the sense of exclusivity found in many congregations. Denominational differences have been known to create an almost tribal mentality among members, isolating congregations and exacerbating existing cleavages within the community (Kunitz, 2004), both of which are detrimental to the wide availability of social capital.

Regardless of whether religious social capital is qualitatively different from social capital generated in other contexts, its unique attributes, including its ability to create norms of trust and reciprocity, its focus on social welfare, its availability, and

its limitations, warrant further investigation, particularly insofar as both religion and social capital are associated with health.

Social Capital and Health

Putnam (2002) somewhat facetiously highlighted the importance of social integration as a determinant of health, suggesting, "As a rule of thumb, if you belong to no groups but decide to join one, you cut your risk of dying over the next year in half. If you smoke and belong to no groups, it's a toss-up statistically whether you should stop smoking or start joining" (p. 331). Although that statement is more a clever rhetorical device than legitimate medical advice, it nonetheless echoes the findings of numerous studies on the relationship between social capital and health.

In their systematic review of research addressing the relationship between social capital and physical health, Kim et al. (2008) found studies in which social capital (often operationalized as a single indicator of social cohesion such as such as social trust or associational membership) was associated with decreased mortality risk, better self-rated health, lower risk of cardiovascular disease, lower rates of obesity, and a lower incidence of some infectious diseases. Overall, individual-level trust and associational membership were most strongly correlated with good self-rated physical health, though their respective relationships with other physical health outcomes were less impressive (Kim et al., 2008). A similar review of research on the relationship between social capital and mental health found high levels of social capital (defined in various ways) to be negatively associated with sadness, social withdrawal, impulsivity, and depression and positively associated with self-esteem and emotional wellbeing

(Almedom & Glandon, 2008). Furthermore, research has shown that high levels of social capital at the neighborhood level are protective against the negative consequences associated with low levels of family cohesion (Stevenson, 1998) and parental monitoring (Beyers et al., 2003).

While considerable evidence suggests that social capital plays an important role across multiple health outcomes, the mechanisms through which it operates are still a matter of some debate. Campbell et al. (1999) argue that living in a community with high levels of social capital may protect residents from many of the risks traditionally associated with low socioeconomic status. Similarly, Kawachi and Kennedy (1997) have argued that the negative health outcomes associated with high levels of income inequality can be viewed as the result of a reduction of social capital in poor neighborhoods. Still others argue that the effect of social capital on health is indirect and operates primarily through health behaviors. Social capital, broadly defined, has been shown to deter unhealthy behaviors such as crime, drug use, and alcoholism (see Frank, Kavage, & Litman, 2006; Sampson, Raudenbush, & Earls, 1997). By the same token, however, social capital can be put to use in ways that are detrimental to the wellbeing of others. Exclusive clubs and networks can restrict the opportunities available to nonmembers, and criminal organizations can use the resources available to them via social networks to advance their own goals.

Overall, there is substantial evidence to support the notion that social capital is associated with a wide variety of positive physical and mental health outcomes.

However, the mechanisms through which it operates and the contexts in which its health-promoting attributes are most effective warrant further investigation.

Religion, Social Capital, and Health Among Immigrant Populations

As discussed in the previous section, research suggests that social capital is associated with a number of positive health outcomes. Given this project's emphasis on religion and immigrant health, however, it is worth noting that some of the health behaviors and/or risk factors associated with immigrants are perhaps uniquely susceptible to the social capital generated as part of a religious congregation, specifically providing a sense of solidarity, assisting with integration into the native-born community, aiding fellow immigrants in the navigation of the American healthcare system, and by promoting health behaviors.

That membership in a religious group could be tied to individual wellbeing is hardly a novel idea; Durkheim wrote of just such a connection in 1897. There are, however, observations within this widely cited work that are of particular relevance to the discussion of religious attendance and its connection to health in a migrant population. In writing of people of the Jewish faith, Durkheim noted that the intolerance to which they had historically been subjected created solidarity within the faith, which in turn put them at a lower risk of suicide (Durkheim 1997 [1897]). Given the hostility and xenophobia with which immigrants have been treated in the United States (Stewart & Quinn, 2012) in recent years and the heated political rhetoric dominating today's political discourse (Stewart & Quinn, 2012), it is not

beyond the pale to speculate that participation in a religious congregation may have a similar effect on recent migrants, promoting health by encouraging a sense of solidarity in the face of considerable intolerance and opposition.

While participation in a religious congregation certainly has the potential to create networks within the immigrant community, there is also anecdotal evidence that adherence to a religious faith can help recent immigrants establish relationships with native-born members of the same faith. In 1999, for example, the British government adopted a "dispersal" policy in which asylum-seekers were sent to different locations around the country, presumably as a means of preventing the formation of immigrant enclaves. Subsequent studies showed that refugees were able to form meaningful bonds with the receiving communities, often through the shared values of a common religious faith (Strang & Ager, 2010). Of course, the inclusion of native-born individuals into the social networks of migrants may or may not have a positive effect on the health of the latter. While such networks may aid in the dissemination of important health-related information and/or resources (Kao, 2004), there is some evidence that acculturation may increase the prevalence of certain risk factors (McKeary & Newbold, 2010).

In addition to the context in which it is practiced, there is evidence that the content of the religious experience of migrants could also be beneficial to their collective health. In comparing Christian churches that cater to native-born North Americans to Christian churches whose congregations are predominantly made up of immigrants, Sasaki and Kim (2011) found that the latter tend to emphasize the

importance of "close, loving relationships involving spending time within the community or having a connection to other believers" (p. 405). Studies have shown that such feelings of connectivity have been associated with more efficacious means of dealing with physical and emotional stress (George et al., 2002), improved longevity (Seeman et al., 1987), and decreased cardiovascular reactivity, which has in turn been linked to lower cardiovascular mortality (Chen & Contrada, 2007). Similar studies have shown frequent religious attendance to be highly correlated with lower rates of suicide, emphysema, cirrhosis, and death related to or resulting from ischemic heart disease (Comstock & Partridge, 1972).

Although a sense of belonging could doubtlessly have a positive effect on the wellbeing of recent migrants, there is some evidence that such bonds can actually be detrimental to their health, particularly in the arena of healthcare access. Close friends and family may be of considerable help as translators or cultural mediators in a medical context, but they bring with them a lack of confidentiality and impartiality that may discourage new migrants from seeking help for potentially embarrassing ailments (Newbold & McKeary, 2010). Similarly, social capital generated within a religious context may be counterproductive when dealing with illnesses that are perceived as being linked to behavior that is prohibited by religious doctrine. Kunitz (2004), for example, argues that the "deep conservatism" found within Hispanic congregations was partially responsible for their slow response to the AIDS crisis. To the extent that this assertion is accurate, it would seem to support Coleman's

(1988) contention that, "a given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others" (p. 95).

There are many additional pathways through which religious attendance may affect health, some of which may be of greater significance to immigrants than to the general population. Religious organizations can facilitate access to basic healthcare via blood drives, blood pressure screenings, etc. (Koenig et al., 1998) in addition to owning, funding or being otherwise affiliated with hospitals and clinics (Koenig et al., 1998). Furthermore, Lee and Newberg (2005) suggest that worship services could promote good health by providing an opportunity for recent migrants to meet doctors, nurses, and other healthcare professionals who also happen to be part of the congregation. Given the extent to which cultural and linguistic barriers to healthcare have been shown to negatively influence the health of migrants, such social connections could be invaluable.

Religion has also been strongly tied to forms of social control, especially as far as health behaviors are concerned. Religious doctrines often contain specific guidelines related to health behaviors and diet (Ellison & Levin, 1998). Many religions, for example, stress sexual abstinence before marriage and discourage the use of alcohol and drugs, though the effectiveness of such efforts is debatable, particularly in the case of abstinence (Santelli et al., 2006). Additionally, faiths with zero-tolerance policies regarding alcohol and drugs, such as the Church of Jesus Christ of Latter Day Saints, have lower rates of some cancers than the general population (Westman et al., 2010). Aggregate-level data have supported the notion that members of religions

whose doctrines emphasize the avoidance of known risk factors tend to have better overall health (Dwyer, Clarke, & Miller, 1990).

Conclusion

In spite of the recent explosion of research on the relationship between religion, social capital, and health, important questions remain. It is unknown, for instance, whether the social capital generated in a religious context is in any way different from social capital generated elsewhere, just as it is unknown whether the availability and/or effects of said capital is in any way different for immigrants compared to the native-born population. This project seeks to address such questions by examining potential effects of social capital on health net of other forms of social capital. Before dealing with these questions, however, this project first provides a comprehensive descriptive analysis of the sample (Chapter II) and examines the factors that contribute to an individual's belonging to a religious organization (Chapter III). Chapter IV and Chapter V test for the effect of religious service attendance on the physical and mental health of the respondent, respectively, and Chapter VI summarizes the findings and conclusions of the previous chapters while also offering directions for future research.

CHAPTER II

DATA, DEMOGRAPHICS, AND DENOMINATION: CHARACTERISTICS OF THE FINAL ANALYTIC SAMPLE

An Introduction to the New Immigrant Survey

The data to be used in this project come from Princeton University's New Immigrant Survey, a study of recent legal immigrants to the United States. The primary goal of the study was to create a publicly available dataset that could be used to assess topics such as health, home environment, migration history, socioeconomic status, and family relationships amongst one of the fastest growing segments of the American population—immigrants.

To this end, a nationally representative sample of 8,573 adults were drawn from a sampling frame that included the top 85 Metropolitan Statistical Areas (MSAs) as well as the 38 most populous counties in the United States. For the sake of representativeness, 10 less densely populated MSAs were also chosen along with 15 pairs of less populous counties. Those who were chosen to participate provided answers to questions on a wide variety of topics that focused as much on their lives prior to coming to the U.S. as they did on the respondents' experiences since becoming legal permanent residents. The interviews were conducted in the respondents' languages of choice. In the initial pilot study, 46% of the interviews

were conducted in English, 26% were conducted in Spanish, and the remaining 28% were conducted in 1 of 17 other languages. Data were collected between June 2003 and June 2004.

Characteristics of the Final Analytic Sample

Although the NIS project was originally conceived as a longitudinal study and a second wave is currently available, this project uses only the first wave of data. The reasons for eschewing the second wave of data are twofold. First, the goals of this project center on understanding the migration process itself, beginning with the decision to leave one's country of origin and ending shortly after arriving in the United States. Second, because less than half of the original sample (47.3%) participated in Wave 2, using it in the forthcoming analyses would have led to a significant reduction in sample size. Such losses would have been in addition to the 417 of the 8,573 Wave 1 observations that were lost to incomplete or missing data, yielding a final analytic sample of 8,156. T-tests showed that the respondents who were lost to missing or incomplete data were not significantly different from the rest of the sample in terms of any of the variables of interest, suggesting a completely random distribution of missing values.

In the interest of providing a more detailed description of the 8,156 respondents to be included in the forthcoming analyses, the following sections seek to highlight significant differences across two key variables: visa category and religious denomination. While the former offers considerable insight into the

respondents' personal histories and social locations, the latter reveals much about their cultural norms, values, and—in some cases—geographic area of origin.

Visa Category as an Indicator of Immigrant Experiences

There are several different ways in which an individual can qualify for legal permanent resident status. Considering the specific criteria that applicants must meet in order to be considered for admittance into the United States under a given visa category, knowing the type of visa on which an individual migrated can provide information about his or her immigration experience. Although there are exceptions, knowing a respondent's visa type allows for inferences about whether he or she was positively or negatively selected (that is, whether he or she migrated by choice or was forced by circumstances outside his or her control), the extent of his or her familial ties in the United States, and—at least in the case of legalization visa recipients—the amount of time spent in the U.S. prior to becoming a legal permanent resident.

The following analysis seeks to highlight differences between the various groups in terms of educational attainment, age, gender, employment, marital status, and English fluency. Although not all differences are statistically significant, those that are support the notion that an immigrant's visa category can be used as a proxy measure for a wide variety of individual-level characteristics. These statistics are summarized in Table 2.1.

Family Visa Recipients

Respondents who came to the United States on a family visa are typically the immediate relatives of legal permanent residents (LPRs). For the purposes of migration, "immediate family" includes spouses of LPRs, children (unmarried and under the age of 21) of LPRs, and parents of LPRs, though the LPR must be age 21 or older in order to sponsor his or her parents. Visas are always available for the immediate family of LPRs, so there tends to be a relatively short waiting period following the submission of an application.

As is evident in the above table, the majority (51.88%) of the total sample came to the United States on family visas. On average, individuals in this category report completing fewer years of formal education than the overall sample (11.20 to 12.70, respectively, $p < 0.001$) and report a higher average age as well (42.02 to 39.09, respectively, $p < 0.001$), though the large standard deviation suggests significant variability in terms of age. Furthermore, those who came into the United States on a family visa tend to be primarily female (60.12%) and married (69.72%). As far as employment and English fluency are concerned, this category ranks last and second-to-last, respectively, with only 43.71% working outside the home and 38.84% speaking English "well" or "very well."

Employment Visa Recipients

Each year, the United States makes available approximately 140,000 employment-based visas. Prospective recipients must have their respective employers file petitions on their behalf, and priority is given to those who demonstrate

extraordinary skills in a given area (i.e., highly regarded professors and/or researchers), professionals who possess advanced degrees, and other skilled workers.

Employment visa recipients make up the second largest group in the NIS dataset (1,673 individuals or 20.52% of the sample at Wave 1). Given that these immigrants are positively selected, it is not surprising that this category boasts the highest mean educational attainment (16.29 years), the highest percentage employed (83.56), and the greatest English fluency (83.85% speak English either "well" or "very well"). This group also tends to be young (mean age = 36.97), primarily male (59.18%) and wealthy (37.99% own their homes, which constitutes a larger proportion than any other category).

Diversity Visa Recipients

The Diversity Immigrant Visa Program, also known as the Green Card Lottery, provides approximately 50,000 visas each year to residents of countries deemed to have low rates of immigration to the United States. Residents of countries with already high rates of migration to the United States (i.e., Mexico, Canada and most of the United Kingdom) are not eligible for this program. Those selected to receive diversity visas are allowed to migrate with their immediate families (spouses and unmarried children under the age of 21) provided sufficient visas are still available and the proper paperwork is filed with the appropriate consulate.

Diversity visa recipients make up the third largest group in the NIS dataset (1,451 individuals or 17.80% of the sample at Wave 1). Respondents in this category are second only to the employment visa recipients in terms of mean educational

attainment (14.81 years) and English language fluency (52.21% speak English either "well" or "very well"). Furthermore, diversity visa recipients comprise the youngest group in the sample (mean age = 32.98) and are mostly male (57.68%). Curiously, this group possesses the lowest rates of home ownership (just 3.48%) and the second-to-lowest rates of employment (56.11%).

Humanitarian Visa Recipients

Humanitarian visa recipients typically fall into one of three categories: refugees (individuals living outside their home country who are unable or unwilling to return home due the threat of persecution or serious harm), asylees (refugees who are already in the United States and are seeking admission at a point of entry), or victims of domestic violence (battered spouses, children, and/or parents of U.S. Citizens). Visas are granted for the immediate family of refugees provided the refugee files a petition within 2 years of arriving in the United States.

Humanitarian visa recipients make up the smallest group in the NIS dataset (554 or approximately 6.8% of the sample at Wave 1). Their mean educational attainment is slightly lower than the overall sample mean (12.36 and 12.70, respectively) but the difference is not statistically significant. The mean age of this group tells a similar story; it is slightly higher than the overall sample mean (40.17 and 39.09, respectively), but again, the difference is not statistically significant. The gender differential in this group favors males slightly (51.62%), and more than a quarter of humanitarian visa recipients own their own homes (26.17%). Finally,

65.52% of the respondents in this group are married, while 48.08% report speaking English "well" or "very well."

Legalization Visa Recipients

The recipients of legalization visas are the beneficiaries of the Legal Immigration and Family Equity (LIFE) Act, which allows individuals who entered the United States unlawfully prior to January 1 1982, and resided continuously in the United States in an undocumented status from January 1, 1982 until May 4, 1988. Furthermore, in order to be eligible for legalization via the LIFE Act, an individual must have written claim for inclusion in at least one of the three following class-action lawsuits regarding eligibility for legalization as part of the Immigration Reform and Control Act (IRCA), which was passed in 1986: Catholic Social Services, Inc. (CSS) vs. Meese (also known as Reno vs. Catholic Social Services, Inc.); the League of United Latin American Citizens (LULAC) vs. the INS and/or Zambrano vs. INS. Finally, applications for legalization under the LIFE Act must have been filed before June 4, 2003. Applicants who had been convicted of a felony or three or more misdemeanors were deemed ineligible.

Given the stringent eligibility requirements, it is unsurprising that recipients of legalization visas make up a relatively small part of the NIS dataset (661 individuals, or approximately 8.12% of the sample at Wave 1). Somewhat more difficult to explain is the group's relatively low mean educational attainment, which at just 8.82 years is by far the lowest of the five visa categories examined. Most of the other descriptive statistics for this category are similar to those of the sample as a whole.

The lone exception is English fluency, which constitutes another area in which legalization visa recipients lag behind the other visa categories (just 38.19% report speaking English either "well" or "very well").

The Importance of Denomination

In the sociology of religion in general, and in the research linking religiosity and health in particular, the role of denomination has often been overlooked. Studies that have taken denomination into account have typically focused on a single faith group rather than making any cross-denominational comparisons (i.e., Shapiro, 2011). There are several potential reasons for omitting religious tradition as an independent variable in statistical models. Many studies report including denomination in preliminary analyses but discarding it due to its statistical insignificance (i.e., Nathenson & Wen, 2012). Other studies may choose to denomination for the sake of parsimony, as including every denomination present in a given survey can yield models that are both unwieldy and difficult to interpret. Finally, the difficulties in classifying smaller religious groups may discourage the use of denomination as an independent variable. Members of the LDS faith, for example, consider themselves Christians, but many Christians consider Mormon beliefs to be too idiosyncratic to be part of mainstream Christianity. The difficulty inherent in situating such minority faiths within the larger American religious landscape may discourage some researchers from addressing denomination at all.

Although these challenges make omitting denominational data seem a rational choice in many circumstances, doing so may yield an incomplete picture of the effect

of religion on any number of outcomes (health-related and otherwise). As Foley and Hoge (2007) note, religious tradition "may shape the organizational culture of a worship community, but it also influences the role of lay people in the community, the character of the obligation they are taught to feel toward the larger community, and the resources for alternative interpretations of the tradition that might affect these impacts" (p. 332). Smidt (2003) makes a similar argument, contending that "different religious doctrines may affect the ways in which people may view human nature more generally, the extent to which such believers choose to relate to those outside their religious community, and the priorities given to political life generally and personal political agendas specifically" (p. 2). Assuming an individual's denomination truly has the potential to affect not only his or her relationship with others of the same faith, but also the entire community, it would be remiss to examine the religious service attendance patterns and health outcomes of the NIS respondents without first considering the possibility that they could be affected by their respective denominations.

Having thus established the fact that notions of the role religion should play in social life varies according to denomination, we will now examine differences in members at a more granular level. The following sections provide a summary of key descriptive statistics stratified by denomination, including the proportion of the total sample that identifies as a member of each faith, mean educational attainment, mean age, gender profile, percentage of members who own their homes, percentage of

members who are employed, marital status, English language proficiency, and area of origin. The results of these analyses are summarized in Table 2.2 and 2.3.

Catholics

Worldwide, Catholics comprise approximately half (50.1%) of all Christians and nearly a fifth (17%) of the world's population (Pew Research Religious and Public Life Project, 2013). A plurality (39%) of Catholics lives in either Latin America or the Caribbean, while nearly a quarter (24%) lives in Europe (Pew Research Religious and Public Life Project, 2013). Given these statistics, it is not surprising that individuals who identify as Catholic comprise the single largest religious group in the NIS study (3108 individuals, or 38.11% of the sample at Wave 1). Using one way ANOVA in tandem with Tukey's post-hoc test reveals that mean educational attainment among Catholics is significantly lower than that of every other religious denomination save for Buddhists and those in the "Other" group ($p < 0.001$ for all pairwise comparisons). There was no significant difference when Catholics were compared to either Buddhists or "Others." Using the same method to analyze differences in age shows Catholics to be, on average, older than respondents who identify as Orthodox ($p < 0.001$), Protestant ($p < 0.01$), Muslim ($p < 0.001$), or Hindu ($p < 0.05$) while showing no significant difference between Catholics and members of the remaining denominations.

In addition to education and age, there are other areas in which those who identify as Catholic differ from the rest of the sample. Regarding gender, for example, Catholics in the NIS dataset tend to be female; women make up 56.01% of Catholic

migrants compared to just 49.30% of the rest of the sample. Similarly, Catholics boast a higher percentage of homeowners than the sample as a whole (22.92% and 20.43%, respectively, $p < 0.01$) as well as a slight—but statistically significant—advantage in terms of employment (59.92% for Catholics compared to 58.21% for the full sample, $p < 0.05$). Moreover, the percentage of Catholics who are married is smaller than that of the sample as a whole (64.46% versus 68.33%, $p < 0.001$), and the same holds true for English proficiency (just 42.76% of Catholics report speaking English "Well" or "Very Well" compared to 50.52% of the total sample, $p < 0.001$).

Finally, as far as area of origin is concerned, bivariate analysis shows that the majority of Catholics (58.49%) emigrated from Latin America or the Caribbean.

Orthodox

Orthodox Christians comprise approximately 11.9% of the Christian population worldwide and approximately 3.2% of the world's total population (Pew Research Religious and Public Life Project, 2011). The vast majority (76.9%) of Orthodox Christians live in Europe with Sub-Saharan Africa coming in a distant second (15.4%) (Pew Research Religious and Public Life Project, 2011).

The 838 respondents who identify as Orthodox make up approximately 10.27% of the sample at Wave 1. As far as mean educational attainment is concerned, ANOVA and Tukey's post-hoc test reveal individuals in this group to be significantly different from Catholics ($p < 0.001$), Muslims ($p < 0.05$), Jews ($p < 0.01$), Buddhists ($p < 0.001$), Hindus ($p < 0.001$), and those in the "Other" category ($p < 0.001$). Regarding age, one-way ANOVA shows respondents who identify as Orthodox to

have a lower mean age than Catholics ($p < 0.001$), Jews ($p < 0.01$), Muslims ($p < 0.001$), unaffiliated individuals ($p < 0.001$), and "Others" ($p < 0.001$). Aside from education and age, the only area in which respondents who identify as Orthodox differ significantly from the rest of the sample is in terms of home ownership; just 11.75% of the Orthodox own their own home compared to 20.43% of the total sample ($p < 0.001$).

In terms of area of origin, Orthodox respondents do not deviate much from what one might expect based on their global distribution, with a plurality (46.44%) having emigrated from Europe, and a large proportion having emigrated from Sub-Saharan Africa (21.83%).

Protestants

Protestants, in addition to being amongst the fastest growing Christian denominations in the world, make up approximately 11.6% of the world's population overall and approximately 36.7% of the world's Christian population (Pew Research Religious and Public Life Project, 2011). A plurality (36.9%) of Protestants lives in Sub-Saharan Africa, and the second-largest group (20%) lives in North America.

Individuals who identify as Protestant comprise the second largest religious group in the NIS study (1306 respondents, or 16.01% of the sample at Wave 1). Comparisons of mean educational attainment reveal Protestants to be significantly higher than that of Catholics ($p < 0.001$), Buddhists ($p < 0.001$), and "Others" and significantly lower than that of Jews ($p < 0.001$) and Hindus ($p < 0.001$). Comparisons with Muslims and nonreligious respondents revealed no significant

differences. Tests for differences in mean age across groups show Protestants to be significantly younger than Catholics ($p < 0.001$), the unaffiliated ($p < 0.001$) and members of "Other" religions ($p < 0.001$) but significantly older than Muslims ($p < 0.05$). Protestants also show noteworthy patterns in marriage and English fluency. In the case of the former, the percentage of Protestants who are married is significantly lower than that of the overall sample (63.52 versus 68.33, $p < 0.001$), and in the case of the latter, the percentage of Protestants who report speaking English "Well" or "Very Well" is significantly higher than same (61.79% vs. 50.52%, $p < 0.001$).

Regarding area of origin, Protestants show no noteworthy pattern, with large portions having emigrated from Latin America (37.09%), Africa (20.39%), and South/Southeast Asia (19.81%).

Muslims

Muslims comprise nearly a quarter of the world's population (24.1%), and the majority (60%) live in South or Southeast Asia. The second largest contingent (20.2%) lives in the Middle East or North Africa, though there are also pockets in Europe and North Africa (Pew Research Religious and Public Life Project, 2012).

There are 643 respondents who identify as Muslim in the NIS dataset, which accounts for 7.88% of the total sample at Wave 1. In terms of mean educational attainment, Muslims are more highly educated than Catholics ($p < 0.001$) and "Others" ($p < 0.05$), less educated than Jews ($p < 0.001$) and Hindus ($p < 0.001$), and on par with Protestants, Buddhists, and those without any religious affiliation. Furthermore,

Muslims tend to be, on average, younger than Catholics ($p < 0.001$), Jews ($p < 0.05$), Buddhists ($p < 0.001$), the unaffiliated ($p < 0.001$), and "Others" ($p < 0.001$). Other significant characteristics of the portion of the sample that identify as Muslim include its higher percentage of males (53.97% versus 48. 19% for the total sample, $p < 0.01$), its lower percentage of homeowners (just 9.13% compared to 20.43% overall, $p < 0.001$). Furthermore, Muslims show slightly lower rates of both employment (53.97% compared to 58.21%, $p < 0.05$) and marriage (62.83% versus 68.33%, $p < 0.01$) than the sample as a whole. Finally, Muslim respondents tend to have a slightly higher percentage of individuals who speak English "Well" or "Very Well" than the total sample (54.61% and 50.52%, respectively, $p < 0.05$).

Like the Protestants, Muslims have a variety of areas of origin, with 34.02% migrating from the Middle East, 28.35% from South/Southeast Asia and 19.84% from Europe.

Jews

There are approximately 14 million Jews in the world, which accounts for just 0.2% of the world's population (Pew Research Religious and Public Life Project, 2012). A plurality (44%) of Jews lives in North America, while the second-largest group (41%) lives in the Middle East or North Africa (Pew Research Religious and Public Life Project, 2012). On average, the 105 respondents who identify as Jewish—who account for just 1.29% of the total sample at Wave 1—have completed more years of formal education than any other denomination ($p < 0.001$) save Hindus, with whom there is no statistically significant difference. At 42.10, Jews have the

highest mean age of any denomination in the sample. A more detailed analysis shows them to be significantly older, on average, than the Orthodox ($p < 0.05$), Muslims ($p < 0.05$), and Hindus ($p < 0.05$). There are no statistically significant differences between Jews and the remaining denominations in terms of age. Jewish respondents only differ from the sample as a whole in terms of their higher rates of marriage (79.05% compared to 68.33%, $p < 0.05$) and English fluency (72.12% report speaking English "Well" or "Very Well" versus 50.52%).

Regarding their areas of origin, respondents who identified as Jewish are fairly evenly split between the Middle East (42.72%) and Europe (36.89%), though drawing any conclusions from such a small sample would be problematic.

Buddhists

The 488 million individuals who identify as Buddhist comprise approximately 7% of the world's population (Pew Research Religious and Public Life Project, 2012), and virtually all (98.7%) of said Buddhists live in Southeast Asia (Pew Research Religious and Public Life Project, 2012). There are 312 respondents who identify as Buddhist in the NIS dataset, which comprises 3.83% of the total sample at Wave 1. A comparison of mean educational attainment among Buddhists with other denominations in the sample reveals them to have completed fewer years of formal education than all denominations ($p < 0.001$ for all pairwise comparisons) except for Catholics and "Others," with whom they are statistically equivalent to one another. A comparison of mean age across the nine denominations shows Buddhists to be older on average than the Orthodox ($p < 0.001$), Protestants ($p < 0.05$), Muslims ($p <$

0.001), and Hindus ($p < 0.01$) with no other statistically significant differences. Additionally, Buddhist respondents tend to be significantly lower than the full sample in terms of their percentage of males (40.89% versus 48.19%, $p < 0.01$), percentage of home owners (9.13% versus 20.43%, $p < 0.001$), percent employed (43.45% compared to 58.21%, $p < 0.001$), and English fluency (just 32.14% report speaking English "Well" or "Very Well" compared to 50.52%). There is no significant difference between Buddhist respondents and the rest of the sample in terms of the percentage of individuals who are married.

Perhaps unsurprisingly given the geographic distribution of Buddhism in that region of the world, the vast majority of respondents who identified as Buddhist (93.81%) emigrated from South or Southeast Asia.

Hindus

There are just over one billion Hindus in the world, which represents just under 15% of the global population (Pew Research Religious and Public Life Project, 2012). Nearly all (99.3%) of Hindus live in South or Southeast Asia (Pew Research Religious and Public Life Project, 2012). Like the aforementioned Jewish respondents, the 618 respondents who identify as Hindu make up a highly educated minority within the NIS dataset. Although they comprise just 7.58% of the total sample at Wave 1, members of this denomination have, on average, completed more years of schooling than members of virtually any denomination ($p < 0.001$ for all pairwise comparisons). Again, there is no significant difference in educational attainment between those of the Hindu faith and those of the Jewish faith. A mean

age of 37.59 puts Hindus amongst the youngest denominations in the sample. Indeed, further analysis shows them to be younger, on average, than Catholics ($p < 0.05$), Jews ($p < 0.05$), and Buddhists ($p < 0.05$). Moreover, compared to the rest of the sample, Hindu respondents boast a higher percentage of males (59.55% compared to 48.19%, $p < 0.001$), a higher employment rate (65.21% of Hindu respondents are employed compared to 58.21% of the total sample, $p < 0.001$), a higher marriage rate (88.83% of Hindu respondents are married versus 68.33% overall, $p < 0.001$), and greater English fluency (78.51% of Hindu respondents speak English "Well" or "Very Well" compared to 50.52% overall, $p < 0.001$). Like Buddhists, the vast majority (90.21%) of Hindus come from South or Southeast Asia.

"Others"

The 58 million individuals who subscribe to religions that are typically not included in surveys—Taoism, Jainism, Shintoism, Sikhism, Tenrikyo, Wicca, Zoroastrianism, and others—comprise nearly 1% of the global population (Pew Research Religious and Public Life Project, 2012). The majority (89.2%) of these individuals live in South and Southeast Asia (Pew Research Religious and Public Life Project, 2012).

There are 212 respondents in the NIS dataset who identify with a religious tradition other than those previously discussed, a group that comprises 2.6% of the total sample at Wave 1. On average, the individuals in this group have completed fewer years of formal education than those who identify as Orthodox ($p < 0.001$), Protestant ($p < 0.001$), Muslim ($p < 0.01$), Jewish ($p < 0.001$), Hindu ($p < 0.001$), and

the unaffiliated ($p < 0.001$), and show no significant difference when compared to Catholics and Buddhists. Regarding age, those in the "Other" category boast the second-highest mean age of any of the subgroups listed, making them older, on average, than the Orthodox ($p < 0.001$), Protestants ($p < 0.001$), Muslims ($p < 0.01$), Jews ($p < 0.001$), Hindus ($p < 0.001$), and the unaffiliated ($p < 0.001$). The only other ways in which these respondents stand out from the rest of the sample are their relatively low percentage of males (41.04% compared to 48.19% overall, $p < 0.01$) and their high marriage rate (81.13% versus 68.33% for the rest of the sample, $p < 0.001$).

The majority (113 or 54.33%) of the individuals in this category migrated from South or Southeast Asia, though a substantial portion (58 or 27.88%) migrated from Latin America or the Caribbean.

No Religion

The 1.1 billion religiously unaffiliated people make up approximately 15% of the global population (Pew Research Religious and Public Life Project, 2012). The great majority (76.2%) of the religiously unaffiliated lives in Southeast Asia, while the second-largest contingent (12%) lives in Europe (Pew Research Religious and Public Life Project, 2012).

The 987 respondents who report having no religious affiliation make up approximately 12.1% of the sample at Wave 1. Regarding educational attainment, individuals in this category tend to be more highly educated than Catholics ($p < 0.001$), Buddhists ($p < 0.05$), and "Others," less educated than either Jews or Hindus

($p < 0.05$ for both comparisons), and on par with those who identify as Orthodox, Protestant, or Muslim. In terms of age, unaffiliated respondents are older than Orthodox respondents (39.94 versus 36.41, $p < 0.001$), Protestant respondents (39.94 compared to 37.99, $p < 0.01$), and Muslim respondents (39.94 versus 36.27, $p < 0.001$). Compared to the rest of the sample, the unaffiliated group has a higher percentage of males (57.16% versus 48.19%, $p < 0.001$), a higher percentage of homeowners (23.33% versus 20.43%, $p < 0.05$), a higher employment rate (61.59% versus 58.21%, $p < 0.05$), a higher marriage rate (72.28% versus 68.33%, $p < 0.01$) and lower English fluency (44.58% versus 50.52%, $p < 0.001$). A majority (50.30%) of the unaffiliated migrated from South and Southeast Asia, though large portions also migrated from Latin America (20.93%) and Europe (19.21%).

Conclusion

As the preceding analyses illustrate, both denomination and visa category provide valuable information about the individuals who comprise the analytic sample. Subsequent chapters will also support the inclusion of these two sets of variables, as religious service attendance and health will be shown to be significantly associated with many of the dependent variables used in Chapters III, IV, and V.

Table 2.1: Demographic Characteristics by Visa Category at Baseline

Visa Categories	Mean Education	Mean Age	Male (%)	Own Home (%)	Employed (%)	Married (%)	Speaks English (%)
Family (*N*=4230)	11.201***	42.02***	39.88***	16.84***	43.71***	69.72**	38.84***
Employment (*N*=1673)	16.292***	36.97***	59.18***	37.99***	83.56***	77.41***	83.85***
Diversity (*N*=1451)	14.806***	32.98***	57.68***	3.48***	56.11	59.82***	52.21
Humanitarian (*N*=554)	12.361***	40.17*	51.62	26.17**	74.19***	65.52	48.08
Legalization (*N*=661)	8.818***	38.25 ***	49.77	31.45***	78.37***	57.49***	38.19***

* $p<.05$, ** $p<.01$, *** $p<.001$

Table 2.2: Relative Frequency of Denomination by Area of Origin

	Catholic	Orthodox	Protestant	Muslim	Jewish	Buddhist	Hindu	None	Other	Total
Europe	11.94	46.44	14.03	19.84	36.89	3.58	1.14	19.21	6.25	16.37
South/ East Asia	16.16	8.44	19.81	28.35	0.97	93.81	90.21	50.30	54.33	30.47
North America	1.66	1.69	4.55	2.05	6.80	0.65	1.63	3.66	3.85	2.48
Latin America	58.49	14.72	37.09	0.79	6.80	1.30	4.89	20.93	27.88	33.70
Africa	3.96	21.83	20.35	14.80	3.88	0.00	1.96	1.63	3.85	8.70
Middle East	1.07	5.55	1.93	34.02	42.72	0.00	0.00	2.24	0.96	4.62
Oceania	0.42	0.48	0.93	0.16	0.97	0.65	0.16	1.22	0.48	0.58
South America	6.30	0.84	1.31	0.00	0.97	0.00	0.00	0.71	2.40	2.87
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 2.3: Demographic Characteristics by Denomination at Baseline

	Mean Education	Mean Age	Male (Percent)	Own Home (Percent)	Employed (Percent)	Married (Percent)	Speaks English Well (Percent)
Full Sample (*N*=8156)	12.698	39.09	48.19	20.43	58.21	68.33	50.52
Catholic (*N*=3108)	11.315***	39.57	43.94***	22.92**	59.92*	64.46***	42.76***
Orthodox (*N*=838)	13.766***	36.41***	51.31	11.71***	55.24	66.55	53.02
Protestant (*N*=1306)	13.432***	37.99**	46.92	22.67	60.02	63.52***	61.79***
Muslim (*N*=643)	12.913***	36.27***	53.97**	9.13***	53.97*	62.83**	54.61*
Jewish (*N*=105)	15.848***	42.10	47.62	25.32	59.05	79.05*	72.12***
Buddhist (*N*=312)	12.081	40.94	40.89**	13.81*	43.45***	71.25	32.14***
Hindu (*N*=618)	15.505***	37.59*	59.55***	21.49	65.21***	88.83***	78.51***
None (*N*=987)	13.363***	39.94	57.16***	23.33*	61.59*	72.28**	44.58***
Other (*N*=212)	11.571	41.27	41.04*	19.72	55.87	81.13***	54.63

* $p<.05$, ** $p<.01$, *** $p<.001$

CHAPTER III

IMMIGRATION AS A THEOLOGIZING EXPERIENCE? EXAMINING POSTMIGRATION RELIGIOUS SERVICE ATTENDANCE

Introduction

The nature of the relationship between immigration and religiosity is a matter of some debate. Some scholars, such as Smith (1978), argue that religion is an important source of strength and support both during the migration process and after immigrants have settled into their new communities, effectively replacing ethnicity and nationality as the primary means by which in-group and out-group boundaries are drawn. Recent studies, however, have challenged the notion of migration as a "theologizing experience," noting that immigrants are not only no more religious than the native-born population, but also that the frequency with which they attend religious services tends to decrease after settling in the United States (Connor, 2009).

In an attempt to determine what sort of immigrant chooses to attend religious services and why he or she chooses to do so, this chapter explores three areas of debate regarding religious service attendance among immigrants. The hypotheses to be tested are as follows:

First, we will test the hypothesis that immigration has a positive effect on religious service attendance. Some research argues that immigrants view migration in spiritual

as well as physical terms, a viewpoint that leads to increased religious consciousness during the process of resettlement (Warner, 1998). To the extent that migration predicts increased religious salience, one might expect religious service attendance to increase as a result. Other research, in contrast, views migration as a disruptive event that is likely to cause a decrease in religious service attendance (Connor, 2009).

Next, we will test the hypothesis that migrating with one's family (a spouse and especially children) makes a decrease in religious service attendance less likely. Many immigrants report a desire to expose their children to certain religious and/or cultural values, and continued religious service attendance provides one means of doing so (Chai, 1998).

Finally, we will test the hypothesis that postmigration religious service attendance is more common among males than females. Research has found that some immigrant males view local congregations as places where they are able to exercise leadership and authority, which, if such opportunities are not available in the secular world, may make religious service attendance particularly attractive (Chen, 2008; George, 1998).

Immigration: A Theologizing Experience?

From the initial decision to leave one's home country to the various challenges associated with settling in a new part of the world, there is evidence to suggest that religion plays a significant role in all phases of the immigration process.

The idea of immigration as a faith-building experience goes back at least as far as Herberg (1960), who viewed international migration as a traumatic event and

religion as the primary means of maintaining a sense of self during the process of relocation. Similarly, Smith (1978) referred to immigration as a "theologizing experience," and argued that the changes experienced during migration often encourage migrants to turn to the sacred for answers and guidance. This theory has cast a long shadow over subsequent research, and findings from several case studies seem to support it. Some immigrants, for example, view the decision to leave their communities of origin as being as much a spiritual decision as it is an economic one. Maya residents in the Guatemalan highlands attend Pentecostal services known as ayunos prior to deciding whether or not to migrate to the United States (Hagan & Ebaugh, 2003). When the pastor officiating at the ayuno predicts a safe journey, those in attendance proceed with their plans to migrate. In cases where the pastor predicts a dangerous journey, however, attendees cancel or postpone their plans (Hagan & Ebaugh, 2003).

For many immigrants, the piety shown before leaving their countries of origin continues after arriving in the U.S. Some go so far as to found their own houses of worship and religious organizations, which offer both religious and ethnic fellowship (Chai, 1997). Others, in contrast, show their devoutness in smaller ways. Many immigrants from Mexico offer retablos and láminas—small devotional paintings left at Catholic shrines—as a means of expressing gratitude for a safe journey, an act that Durand and Massey (1992) view as one way in which migrants frame their journeys in spiritual terms, drawing on their faith for meaning, protection, and guidance.

Despite the evidence suggesting that immigrants rely on religious beliefs for

strength and guidance at multiple points during the migration process, the devotion shown during the journey does not necessarily predict frequent attendance after arriving in the United States. Some scholars suggest just the opposite, arguing that immigration is a disruptive event that is likely to result in a decline in overall religiosity. This argument, known alternatively as integration-disruption theory and dislocation theory, is not without empirical support. Indeed, many studies have found that immigrants' self-reported religious service attendance declines after arriving in their host country. Welch and Baltzell (1984) demonstrated an inverse relationship between geographic mobility and religious service attendance, a pattern they attributed to disruption of the social ties that encourage "conventional behaviors such as churchgoing" (p. 76). More recently, Connor (2009) reported that immigrants, on average, attended church less frequently after arriving in the U.S. than they did in their countries of origin even after controlling for denomination and contextual factors.

The biggest impediment to religious service attendance for many new immigrants to the U.S. could simply be a lack of opportunity for members of religious minorities (Ralston, 1998). While virtually all faiths are likely to be represented in the large metropolitan areas that have traditionally attracted immigrants, the new destination areas, such as Utah and South Carolina, are more religiously homogenous and less apt to serve the needs of immigrants from Asia, Africa, and Latin America (Ralston, 1998). Those without access to a suitable place of worship may choose to worship at home instead. Even immigrants who have

access to a proper church, mosque, or temple may not feel at home there. Indeed, case studies of immigrant religious groups are replete with examples of disagreements both between immigrants and native-born believers and distinct immigrant groups. Some disagreements are the result of cultural differences in the ways certain tenets of the faith are observed. Religious practices tend to vary slightly from one part of the world to another, even within the same denomination. The religious practices of many immigrant groups are often closely intertwined with culturally specific belief sets, which may or may not jibe with those of the congregations in destination communities (and vice versa). Participants in a case study of Guatemalan immigrants living in Los Angeles, for example, reported feeling as though the local pastors were dismissive of their Mayan-influenced faith and culture, which led them to create their own religious/ethnic organization (Wellmeier, 1998).

In addition to cultural issues, language is often mentioned as a point of contention in religious organizations that cater to immigrants. When immigrants from different countries of origin comprise a single religious community, the language in which the services are conducted is likely to cause some friction amongst the members. Badr's (2000) description of a mosque outside Houston provides an example of this phenomenon. Because the majority of members hail from Pakistan, any portions of the service that aren't read directly from the Koran are spoken in Farsi, much to the annoyance of those who migrated from other parts of the Middle East. Despite the Imam's efforts to minimize cultural differences, the non-Pakistani

minority reported feeling marginalized, which in turn translated to a lower level of involvement and less frequent service attendance.

Denominational Differences in Religious Service Attendance

Any discussion of patterns of religious service attendance would be incomplete without acknowledging the role played by denomination. Different denominations not only disagree as to what constitutes a religious service, but also on the relative importance of said services to the spiritual wellbeing of their respective adherents. Indeed, the notion of a congregation of like-minded believers being led through a worship service by a spiritual authority figure is a distinctly Western one that has no parallel in many Eastern faiths. In the United States, however, members of some such faiths, perhaps driven by a desire to connect with others of a similar ethnic and cultural background, have moved toward a congregational model complete with organizational structures staffed by lay members.

Many religions, especially those in the Christian tradition, insist that their members attend church regularly in order to fully participate in the faith. Both the Catholic and Orthodox Churches, for example, typically only offer certain rites in the context of a formal religious service. Baptism, communion, and confession, for example, all require the participation of a member of the clergy. And while many Protestant faiths tend to focus more on the individual's relationship with God than on the rituals characteristic of Catholic and Orthodox worship, they nonetheless often expect their members to attend with some regularity. Some churches will go so

far as to offer multiple services per day as a means of accommodating their members' disparate schedules.

At the other end of the spectrum are Buddhism and Hinduism, neither of which requires regular attendance on the part of its members. As Huynh (2000) observed in a case study of Vietnamese Buddhists living in Houston, Texas, "Buddhism teaches that one can be a devout Buddhist as long as he/she lives according to the teachings of Buddha and, therefore, a Buddhist need not go to temple to pray or read sutras" (p. 46). Similarly, Yang (2000) found that Chinese Buddhist temples often lack a formal membership structure in which lay members can participate. As a result, adherents tend to visit a temple on a semiregular basis as opposed to "joining" one in the sense that a Christian might join a church. That religious service attendance is not considered an essential aspect of Buddhism is also apparent in the NIS data, as only those who identify as having no religion report attending religious services less frequently than do Buddhists. Like Buddhists, Hindus have traditionally viewed their temples as places where individuals and families go to worship, not as social spaces where members build relationships with one another. As Foley and Hoge (2007) explain, Hindu temples "were never envisioned to forge close-knit congregations of members. Indeed, Hindu temples do not have the concept 'member' at all, and there are no membership lists" (p. 100).

Islam falls somewhere between the Christian faiths, which strongly encourage regular attendance, and Buddhism and Hinduism, which take a more laissez-faire approach to religious service attendance. Most mosques offer only one official prayer

service per week, which is held at noon on Fridays. This service is the only event at which members of the mosque are required to be present, though attendance is only mandatory for men (Badr, 2000). Those who are ill or otherwise unable to attend may worship on their own.

Given the fact that expectations of religious service attendance vary from one denomination to the next, we would expect to see denominational differences in religious service attendance amongst the NIS respondents. Bivariate analysis of religious service attendance by denomination conforms to this expectation. The results of this bivariate analysis are summarized in Table 3.1.

Individual-Level Predictors of Religious Service Attendance

The literature on religious service attendance is full of examples of individual-level covariates of religious service attendance. The nature of these relationships and the mechanisms through which they operate, however, are less clear. The following section details current research on possible connections between religious service attendance and marital status, family structure, education age, and gender, all of which will be considered in subsequent analyses.

Marital status is an individual-level factor that must be considered in the discussion of religious service attendance. Although scholars generally agree that married people are more likely to attend religious services regularly than are non-married people, the causal direction of this relationship is a matter of some debate. Some scholars argue that an individual's marital status functions as the independent variable in this relationship, such that couples who are cohabitating (as opposed to

being formally married) would likely avoid religious communities where such relationships are discouraged. Other scholars, in contrast, postulate that causality flows in the opposite direction, such that people who attend religious services regularly are more likely to get married than those who do not. As evidence for this claim, they cite the fact that many religious communities emphasize the importance of family. Furthermore, such communities tend to be endogamous, which gives members an advantage over nonmembers in terms of finding a mate. In either case, married people would be expected to attend religious services with greater frequency than unmarried people.

Much like marital status, children could be either the cause or effect of religious service attendance. On the one hand, religion can serve as a particularly effective means of maintaining an ethnic or cultural identity (Chai, 1998), which might make it attractive to immigrant parents interested in passing their norms, values and language on to their second-generation children. On the other, many religions either directly or indirectly promote fertility among their members. Some faiths, like the LDS Church and certain Protestant sects, make no secret of their preference for large families, while others merely discourage abortion and contraception, which can in turn lead to large families. Again, the nature of the relationship is moot, as both explanations predict religious service attendance to be positively correlated with having children.

Additional individual-level factors include education and age, both of which are correlated with religious service attendance. In the case of the former, research

has shown a negative, linear correlation between the two, such that each additional level of education is correlated with a similar decrease in religious service attendance (Need & De Graaf, 1996). The relationship between age and religious service attendance is less clear. While there is general agreement that individuals are most likely to cease to identify with a religion in their late teens and early twenties, a clear pattern for other age groups has yet to emerge (Schwadel, 2010).

The final individual-level factor to be considered in this analysis is gender. Although native-born women tend to score higher on virtually every measure of religiosity—including religious service attendance—relative to native-born men, this trend may not be generalizable to immigrant populations. Indeed, Tubergen (2006) found equal rates of religious service attendance among male and female immigrants despite the fact that the latter were 53% more likely to report being affiliated with a religion. Some findings suggest that immigrant males, many of whom find themselves occupying a lower socioeconomic stratum in the U.S. than they did in their countries of origin, may view religion as a context in which they can hold a position of authority and regain some of their lost prestige. Chai (1998) documented a tendency among immigrant churches to create additional positions of authority for male members to occupy. These superfluous titles have actually prevented at least one Korean church from merging with a similar, native-born congregation, as any male members opposed the merger on the grounds that it would have eliminated any positions of authority that did not have counterpart in the native-born congregation (Chai, 1998).

Methods

This study addresses the limitations of previous research on this subject by using a nationally representative sample and employing a stepwise approach to test specific mediating variables. Additionally, the following models will incorporate pre- and postmigration factors, which add a longitudinal element to the analyses. The data, measures, and analytic plan are detailed below.

Measures

Religious service attendance. Religious service attendance constitutes the primary dependent variable of interest. The frequency with which an individual attends religious services is assessed via the question, "Since becoming a permanent resident, how many times have you attended religious services?" Because of the considerable variability amongst respondents in the amount of time between becoming a permanent resident and taking the survey, religious service attendance is perhaps best expressed as an average over a specified time period. Given that different denominations have different expectations regarding frequency of religious service attendance, however, there is some uncertainty as to what the appropriate time period should be. Other researchers using these data, specifically Connor (2009) and Shapiro (2011), have used monthly attendance a benchmark for regular attendance, arguing that committed members of denominations that do not require regular attendance (i.e., Buddhists) nevertheless worship at a temple or shrine at least once per month. For the purposes of this study, monthly religious service attendance has been coded dichotomously (i.e., 1 = respondents who attend religious services at least

once per month and 0 = respondents who do not). Collapsing religious service attendance into a dichotomous variable has the added benefit of minimizing the disruption caused by its distribution, which is positively skewed to a considerable degree.

Belonging to a religious congregation. A second dependent variable of interest has to do with whether or not the respondent considers himself or herself to be a part of a religious congregation. This response was also coded dichotomously (i.e., 1 = respondents who consider themselves to be part of a religious congregation and 0 = respondents who do not). Approximately 21% of respondents consider themselves to be part of a religious congregation, compared to 79% who do not. Admittedly, this question is inherently biased against religions like Buddhism and Hinduism, for whom the congregational model is traditionally not a normal part of religious life (see Table 3.2 for a complete bivariate analysis of belonging to a religious congregation by denomination). In spite of this bias, examining which factors are associated with belonging to a congregation lays important groundwork for analyses to be conducted in later chapters, particularly as it relates to the development and generation of religious social capital.

Religious denomination. The respondent's religious denomination was determined by his or her answer to the question, "What religious tradition, if any, describes your current religion?" Respondents chose from a list that included Catholic, Orthodox, Protestant, Muslim, Jewish, Buddhist, Hindu, No Religion, and "Other."

Visa category. The respondent's visa category represents the tenets of U.S. immigration law under which he or she petitioned to become a permanent resident. The categories considered in this analysis include Family, Employment, Diversity, Humanitarian, and Legalization. For a more detailed explanation of these categories, see Chapter II.

Sex. The respondent's sex was treated dichotomously and was determined by his or her answer to the question, "Are you male or female?" In the regression analyses, a dummy variable used to indicate male respondents, while females serve as the reference category.

Age. The age variable reflects the respondent's age at the time of the survey and was calculated from the respondent's exact birth date (day, year, and month).

Education. The respondent's educational attainment is a continuous variable and was assessed via the total years of schooling he or she had completed at the time of the interview. Reported values ranged from 0 to 36 years of schooling with a mean of 12.64 and a standard deviation of 5.21.

Marital status. The respondent's marital status reflects his or her relationship status at the time of the interview. Possible responses include married; living together in a marriage-like relationship; separated; divorced; widowed; never married and not living in a marriage-like relationship; refused; don't know. Approximately 68.3% of the respondents were married, 2.48% reported living in a marriage-like relationship, 2.16% were separated, 2.82% were divorced, 3.36% were widowed, and 20.8% reported being unmarried and not living in a marriage-like relationship. For the sake

of parsimony, this variable was recoded dichotomously, placing respondents who were either married or living in a marriage-like relationship in one category and all other respondents in another.

Children in the home. This measure represents whether or not the respondent had at least one child living in the home at the time of the interview. A child living at home is defined as any biological, adopted or stepchild under the age of 18 living at least part time in the home of the respondent. Responses were coded dichotomously, placing everyone with at least one child in one category and everyone else in the other. Approximately 64.8% of respondents reported having at least one child living in the home at the time of the interview, while 35.2% reported having none.

Premigration religious service attendance. The respondent's frequency of pre-migration religious service attendance is assessed via his or her response to the question, "Before coming to the United States to live, how often did you attend religious services in your country of last foreign residence?" The data were then recoded into a dichotomous measure of monthly attendance. Nearly two-thirds (64.83%) of the sample reported attending religious services at least monthly prior to arrival in the U.S.

English fluency. The measure designed to capture the respondent's level of proficiency with the English language was based on his or her answer to the question, "How well would you say you speak English?" The respondent's responses were recorded on a four-point scale ranging from "Very well" to "Not at all." For the purposes of this analysis, responses were recoded into a dichotomous variable that

effectively separated those who spoke English either "Very well" or "Well" from those who claimed to speak English "Not well" or "Not at all." Approximately 50.52% of the sample reported speaking English well, compared to 49.48% who did not.

Time in the U.S. Although all NIS respondents are new immigrants in the sense that they received their LPR status less than 1 year prior to participating in the survey, not all of them are new or even recent arrivals to the U.S. Some, for example, entered the U.S. on either a student or tourist visa several years before obtaining LPR status. Some researchers (i.e., Connor, 2009) have addressed this issue by restricting their analyses to respondents who received LPR status while living outside the U.S., eliminating more than half the sample in the process. This study, in contrast, controls for the fact that some respondents have been in the U.S. for several years by including as an independent variable the total amount of time spent in the U.S. prior to participating in the study. Preliminary analyses show the mean of 1.49 years with a standard deviation of 3.03 and a maximum of 36.65.

Analytic Plan

This analysis will utilize two series of logistic regression models to determine the relationship between various individual factors—including marital status, family structure, and gender—on postmigration religious service attendance and belonging to a congregation, respectively. In the first set of analyses, which will include religious service attendance as the dependent variable, Model 1 will include only denomination, while Model 2 will consider only demographic traits. The

respondent's visa category will be the focus of Model 3, and Model 4 will consider salient migration-related variables (English fluency, premigration religious service attendance and length of time in the U.S.). Finally, Model 5 will incorporate all aforementioned variables into a single regression equation. The second series of analyses will follow the same progression, but with belonging to a religious congregation as the dependent variable.

Results

Table 3.1 compares monthly religious service attendance before and after immigrating to the U.S. The full sample showed a 23% decrease in the percentage of respondents who attend religious services at least once per month. Further analysis after stratifying by denomination showed similar results. The only exception to this pattern were Jews, who actually showed a 6% increase in the percentage of respondents who attend religious services at least once per month. While noteworthy, this anomaly must be interpreted with caution, as it could by a statistical artifact resulting from the small sample size ($n = 102$).

Table 3.2 summarizes the results of the aforementioned logistic regression analysis. Model 1 explores the effect of denomination on the probability of attending religious services at least once per month after moving to the United States. The odds ratios associated with respondents who identify as Protestant and "Other" are statistically significant ($p < 0.001$) and greater than 1, which suggests that these two groups have a higher probability of attending religious services at least once per month relative to those who identify as Catholic. In contrast, the odds ratios

associated with the Orthodox, Muslims, Buddhists, and Hindus are all statistically significant ($p < 0.01$ for the Orthodox, while $p < 0.001$ for the others) and less than 1.0, which indicates a lower probability of attending religious services at least once per month compared to those who identify as Catholic. The results in these cases could be due to either a lack of opportunity (i.e., a dearth of churches, temples and/or mosques in the migrants' new communities) or different attitudes regarding the necessity of religious service attendance (regular service attendance is not considered a necessary component of worship amongst Buddhists or Hindus, and only Muslim males are required to attend the weekly prayer service).

Model 2 examines the relationships between demographic characteristics and monthly religious service attendance. The dummy variable for males is statistically significant ($p < 0.001$) and boasts an odds ratio of 0.76, which indicates that male respondents have a lower probability of attending religious services at least once per month than do females. The age variable is also statistically significant, but with an odds ratio of 1.01 and a standard error of 0.01, any effect that age might have on religious service attendance is clearly minimal. Both marital status and having children in the home appear to be positively associated, but their odds ratios (1.03 and 1.16, respectively, $p < 0.05$) imply that married respondents and those with children are only slightly more likely to attend religious services than the unmarried and the childless. The variables representing education and employment status are both statistically insignificant, and the fact that these variables' respective odds ratios are all

close to 1.0 suggests an inconsequential relationship regardless of statistical significance.

Model 3 evaluates the relationship between a respondent's visa category and his or her religious service attendance frequency. The odds ratio associated with those who migrated on an employment visa is statistically significant ($p < 0.05$) and greater than 1.0, which implies that such respondents have a slightly higher probability of attending religious services at least once per month than do respondents who migrated on a family visa. Similarly, respondents who were awarded LPR status under a legalization program appear to have a higher probability of attending religious services at least once per month relative to those in the reference category (odds ratio = 1.34, $p < 0.001$), though this result may simply be a product of those in the former group having spent more time in the United States than those in the latter. In contrast to both the employment and legalization visa recipients, beneficiaries of the diversity lottery appear to be less likely to attend religious services at least once per month than those in the reference category.

Model 4 considers the effects of other migration-related variables, specifically premigration church attendance, English language fluency, and the respondent's status as a new arrival. Unsurprisingly, respondents who attended religious services at least once per month prior to migrating have a higher probability of doing so after migrating than are those who did not (odds ratio = 7.05, $p < 0.001$). Speaking English well also appears to have a positive relationship with monthly religious service attendance, as those who speak English either "well" or "very well" have a

slightly higher probability of attending religious services at least once per month than those who do not (odds ratio = 1.14, $p < 0.05$). The variable used to indicate time spent in the U.S. prior to taking the survey is statistically significant and greater than 1.0, suggesting that the probability of attending religious services at least once per month increases with time spent in the U.S.

Finally, Model 5 incorporates all aforementioned variables in an attempt to determine what factors predict religious service attendance among recent immigrants to the United States. Regarding denomination, the dummy variable for Protestants remains statistically significant ($p < 0.001$), and the odds ratio increased slightly from 1.57 to 1.59. Similarly, the odds ratios for the Orthodox, Muslims, Buddhists, and Hindus retain their statistical significance ($p < 0.001$), and their odds ratios in Model 5 are comparable to what they were in Model 1. The dummy variable for "Others" saw the most significant change, shifting from a significantly positive relationship in Model 1 (odds ratio = 4.22, $p < 0.001$) to a slightly positive, statistically insignificant relationship in Model 5 (odds ratio = 1.11). The relationships between the demographic variables and monthly religious service attendance changed somewhat in both direction and statistical significance. The effect of being male is not as strong in Model 5 as it was in Model 2, and the effect of having children in the home lost statistical significance, as did the effect of being married. As far as visa categories are concerned, the dummy variables for legalization and humanitarian visas saw the greatest change. The former lost both statistical significance and strength after controlling for other factors, while the latter gained both strength and statistical

significance (odds ratio = 1.75, $p < 0.001$). The odds ratios of the final three variables also changed somewhat with the inclusion of the other predictors. The odds ratio associated with premigration religious service attendance decreased substantially from 7.06 to 4.51, though it retained its statistical significance. English-language fluency and time in the U.S., in contrast, are no longer statistically significant in the final model.

The second set of analyses follows the same basic pattern, but with a different dichotomous outcome: whether or not the respondent considers himself or herself to be a member of a congregation. The results of these analyses are summarized in Table 3.3.

Model 1 examines the association between denomination and belonging to a congregation. Unlike the previous set of analyses, which used those who do not identify with a religion as the reference category, this model uses Catholics as the reference category (in addition to the fact that Catholics comprise a plurality of the sample, using them as the reference category in this case allows for more informative comparisons; the fact that Protestants are more likely to belong to a congregation than those who do not identify with a religion is not particularly enlightening, but the fact that they are more likely than Catholics provides food for thought). The odds ratios of the Orthodox, Protestants, and Others are all statistically significant and greater than 1.0, which suggests a greater likelihood of belonging to a congregation relative to Catholics. The odds ratios of Muslims, Buddhists, Hindus, and those who do not identify with a religion, in contrast, are statistically significant and less than 1.0,

which suggests a lower likelihood of belonging to a congregation compared to Catholics. The odds ratio for respondents who identify as Jewish is not statistically significant, but the fact that it is greater than 1.0 is not unexpected given the attendance patterns shown in the previous set of analyses.

Model 2 incorporates the respondents' demographic characteristics, including gender, age, education level, marital status, the presence of children in the home, and employment status. The only statistically significant variable with an odds ratio below one is the dummy variable for males, which suggests that male respondents have a lower likelihood of belonging to a congregation than do females, which is not terribly surprising given the attendance patterns of males described in the previous set of analyses. Both education and marital status are statistically significant ($p < 0.001$), but their odds ratios (1.02 and 1.05, respectively) suggest only a modest positive association with belonging to a congregation. The largest odds ratio (1.58, $p < 0.001$) belongs to the dummy variable indicative of having children in the home, which suggests a greater likelihood of belonging to a congregation amongst respondents who have children in the home relative to those who do not. The same holds true for respondents who were employed at the time of the survey (odds ratio = 1.28, $p < 0.001$) compared to those who were not.

Model 3 considers the respondents' visa categories as potential predictors of belonging to a congregation. Using those who were granted LPR status under a family visa as a reference category, results show a positive, statistically significant association for the dummy variables indicative of employment visa recipients (odds

ratio = 1.51, $p < 0.001$), legalization visa recipients (odds ratio = 2.02, $p < 0.001$), and humanitarian visa recipients (odds ratio = 2.07, $p < 0.001$), which suggests that respondents in those categories have a greater likelihood of belonging to a congregation relative to family visa recipients.

Model 4 explores factors related to migration, specifically premigration religious service attendance, English language fluency, and the amount of time spent in the United States prior to participating in the study. Unsurprisingly, respondents who attended religious services at least once per month prior to migrating show a significantly greater likelihood of belonging to a congregation in the U.S. compared to those who did not (odds ratio = 4.03, $p < 0.001$). Similarly, respondents who report speaking English either "Well" or "Very Well" show a greater likelihood of belonging to a congregation than those who do not (odds ratio = 1.29, $p < 0.01$). The respondent's time in the U.S. (measured in years since first entering the country) also proved to be statistically significant ($p < 0.001$), though its association was fairly modest (odds ratio = 1.07).

Model 5 incorporates all aforementioned independent variables into a single model in an effort to determine their collective effect on the probability of the respondents' belonging to a congregation. The dummy variables representing the respondents' denominations remained largely unchanged in the full model, though three—the Orthodox, Protestant, and "Others"—increased in effect size, statistical significance or both. The only other dummy variable that saw significant change was that indicative of Buddhists, which went from being highly statistically significant ($p <$

0.001) in Model 1 to being nonsignificant in Model 5. With the exception of the dummy variables indicating marital and employment status, which lost statistical significance, the demographic variables included in Model 2 saw little change, though the odds ratios for gender, education, and having children in the home decreased slightly both in terms of effect size and statistical significance. Regarding the respondents' visa categories, the only dummy that saw significant change was that representing diversity visa recipients, which went from being statistically non-significant in Model 3 to statistically significant in the full model. Finally, of the variables related to migration, English-language fluency saw the largest change, decreasing in effect size and losing statistical significance entirely. Premigration attendance and the amount of time since entering the U.S., in contrast, retained their statistical significance, though their odds ratios decreased slightly.

Tests of Hypotheses

The first hypothesis stated that immigration would have a positive effect on religious service attendance. As mentioned above, the data show a significant decrease in the percentage of respondents who report attending religious services at least once per month. Supplementary analyses (not shown) show a similar pattern regardless of the time period used to calculate the frequency of religious service attendance (i.e., weekly, monthly or annually). In sum, this hypothesis is not supported.

The second hypothesis predicted that migrating with one's family would have a positive effect on religious service attendance. When considered with other

demographic variables only, being married and having children both showed a positive association with religious service attendance. When included with the full model, however, both variables lost their statistical significance. This hypothesis is not supported.

The third hypothesis held that males would be more likely to attend religious services than are females. Whether considered only with other demographic variables or in the full model, the odds ratio associated with the dummy variable for males is statistically significant and less than 1.0. These results suggest that males are less likely to attend religious services than are females. Hypothesis #3 is not supported.

Discussion and Conclusion

Broadly speaking, this paper set out to examine characteristics that predict postmigration religious service attendance and belonging to a religious congregation after arriving in the U.S. These findings contribute to our understanding of immigrant religiosity in the following four ways.

First, these results contradict the long-held belief that immigration constitutes a theologizing experience that is likely to lead to increased religious service attendance. The fact that the decline in service attendance was both precipitous and nearly universal lends support to the integration-disruption hypothesis. Although these results do not necessarily disprove the notion that immigration results in a heightened religious consciousness (especially for individuals who find themselves in the religious minority after arriving in the U.S.), they do suggest that any increase in religious salience as a result of immigration does not manifest itself as an increase in religious

service attendance or in becoming part of a religious congregation. Potential explanations for these results are numerous and merit further examination. Part of the decrease in religious service attendance, for instance, may be due to the respondents' recent arrival. Finding a religious community that one feels comfortable with can be a time-consuming process, and the new immigrants who participated in this survey may not yet have had a chance to do so. That time in the U.S. remained statistically significant in its association with belonging to a religious congregation after controlling for other individual-level factors lends support to this notion.

Second, these results illustrate the salience of individual-level characteristics, particularly gender and premigration religious service attendance. Of the demographic characteristics considered, the dummy variable for males showed the strongest association with both postmigration religious service attendance and belonging to a religious congregation, suggesting that men are significantly less likely to attend religious services at least once per month or belong to a religious congregation than are women. Similarly, the importance of premigration religious service attendance cannot be overstated. The size of the effect and its statistical significance provide additional evidence against immigration as a theologizing experience. In other words, the immigrants who attend religious services regularly in the U.S. and/or belong to a religious congregation are those who attended religious services frequently in their countries of origin. To put it another way, there appear to be few immigrants finding Jesus en route.

Third, the statistical significance of visa category in the analysis is evidence of certain constellations of individual characteristics that predict religious service attendance and belonging to a religious congregation, albeit through different underlying mechanisms. That both employment and humanitarian visas were associated with more frequent religious service attendance and belonging to a religious congregation is noteworthy due primarily to the disparate characteristics of the two groups. Employment visa recipients are the most highly educated of any category and show the highest rates of home ownership, marriage, and English-language proficiency, all of which point to their being positively selected immigrants. Humanitarian visa recipients, in contrast, are by definition more likely to have been negatively selected, and report relatively low educational attainment and English-language fluency. The relatively high probability of regular religious service attendance among humanitarian visa recipients makes intuitive sense—such immigrants would be more likely to have experienced persecution and/or receive aid from religious groups, either of which could encourage postmigration service attendance—but the higher probability of regular service attendance among employment visa recipients warrants further investigation.

Finally, these findings underscore the differences in religious worship across denominations. Because the congregational model of worship, which includes regular religious service attendance and being part of a community of followers, is largely alien to Eastern religions such as Buddhism, Hinduism, and Islam, their rates of participation in the types of worship examined in this study are understandably

lower than their Christian counterparts. A detailed examination of changes in their postmigration religiosity would likely require a more nuanced measure than either religious service attendance or belonging to a religious congregation.

These findings must be considered in the context of several limitations. First, because the publicly available version of the NIS dataset does not contain any of the respondents' residential data, I was unable to control for contextual effects such as regional variations in religious pluralism. Second, the lack of variety in the religion variables available in the NIS data severely limits the type of analysis that can be performed. Because these data only allow for examination of one aspect of religiosity—religious service attendance—it is impossible to dismiss the possibility that immigration increases religiosity in other areas. Finally, these findings are based on data gathered exclusively from legal immigrants, so the extent to which they are applicable to other immigrant groups is debatable.

In spite of these limitations, this chapter adds to the discussion of immigrant religiosity by challenging the notion of migration as a theologizing experience and by highlighting the importance of individual-level factors. The implications of these findings for immigrant health will be discussed in the next two chapters.

Table 3.1: Percent Attending Religious Services Monthly or More

	Premigration	Postmigration
Full Sample (*N*=8156)	64.83	41.83
Catholic (*N*=3108)	81.66	48.88
Orthodox (*N*=838)	67.02	41.98
Protestant (*N*=1306)	76.31	59.97
Muslim (*N*=643)	49.30	20.33
Jewish (*N*=105)	41.91	47.92
Buddhist (*N*=312)	35.78	18.81
Hindu (*N*=618)	63.59	30.10
None (*N*=987)	8.06	4.72
(*N*=212)	77.01	55.56

Table 3.2: Individual-Level Predictors of Postmigration Monthly Religious Service Attendance

	Model 1	Model 2	Model 3	Model 4	Model 5
Religious Denomination					
Catholic (Reference Category)					
No Religion	0.05***				0.10***
	(0.01)				(0.02)
Orthodox	0.76**				0.77*
	(0.07)				(0.07)
Protestant	1.57***				1.59***
	(0.27)				(0.13)
Muslim	0.27***				0.32***
	(0.03)				(0.05)
Buddhist	0.24***				0.32***
	(0.04)				(0.05)
Jewish	0.96				1.06
	(0.19)				(0.24)
Hindu	0.45***				0.36***
	(0.04)				(0.05)
Other	4.22***				1.11
	(0.48)				(0.18)
Demographic Variables					
Male		0.76***			0.89*
		(0.04)			(0.05)
Age		1.01**			1.01***
		(0.01)			(0.01)
Education		1.01			1.01*
		(0.01)			(0.01)
Married		1.03*			1.08
		(0.01)			(0.07)
Children		1.16*			0.92
		(0.07)			(0.06)
Employed		1.07			0.91
		(0.05)			(0.06)
Visa Category					
Family (Reference Category)					
Employment			1.13*		1.64***
			(0.07)		(0.13)
Diversity			0.87*		0.87
			(0.06)		(0.07)
Legalization			1.34***		1.07
			(0.12)		(0.11)
Humanitarian			1.06		1.75***
			(0.11)		(0.19)
Migration Experiences					
Premigration Attendance				7.06***	4.51***
				(0.43)	(0.31)
English Fluency				1.17**	1.11
				(0.06)	(0.07)
Time in the U.S.				1.03**	1.01
				(0.01)	(0.01)
Standard errors in parentheses * $p<.05$, ** $p<.01$, *** $p<.001$					

Table 3.3: Individual-Level Predictors of Postmigration Religious Congregation Membership

	Model 1	Model 2	Model 3	Model 4	Model 5
Religious Denomination					
Catholic (Reference Category)					
No Religion	0.06***				0.11***
	(0.17)				(0.03)
Orthodox	1.25*				1.60***
	(0.12)				(0.17)
Protestant	3.69***				4.23***
	(0.26)				(0.34)
Muslim	0.21***				0.29***
	(0.04)				(0.06)
Buddhist	0.46***				0.74
	(0.09)				(0.15)
Jewish	1.41				1.37
	(0.50)				(0.42)
Hindu	0.26***				0.25***
	(0.04)				(0.05)
Other	2.17***				2.52***
	(0.31)				(0.40)
Demographic Variables					
Male		0.72***			0.83**
		(0.04)			(0.05)
Age		0.99			0.99
		(0.01)			(0.002)
Education		1.02***			1.02**
		(0.01)			(0.01)
Married		1.05**			1.01
		(0.01)			(0.02)
Children		1.56***			1.29**
		(0.12)			(0.11)
Employed		1.28***			1.04
		(0.08)			(0.06)
Visa Category					
Family (Reference Category)					
Employment			1.51***		1.61***
			(0.07)		(0.15)
Diversity			0.87		0.73**
			(0.07)		(0.07)
Legalization			2.02***		1.63***
			(0.12)		(0.11)
Humanitarian			2.07***		1.83***
			(0.21)		(0.24)
Migration Experiences					
Premigration Attendance				4.03***	2.84***
				(0.30)	(0.24)
English Fluency				1.29**	1.11
				(0.07)	(0.08)
Time in U.S.				1.07***	1.05***
				(0.01)	(0.01)
Standard errors in parentheses * p<.05, **p<.01, ***p<.001					

CHAPTER IV

BECOMING A HEALTHY MIGRANT: PREDICTORS OF POSTMIGRATION PHYSICAL HEALTH

Introduction

The rapid growth of the foreign-born population in the United States has made migration an increasingly important issue among both researchers and policy makers. Additionally, the diversity of the post-1965 migrant cohorts, which differ significantly from previous waves in terms of race, ethnicity, and national origin, has led scholars of migration to examine everything from recent immigrants' reasons for migrating to their acculturation practices and their health. Considerable effort, for example, has been put into testing the hypothesis that immigrants to the U.S. are in some way different from the native-born in terms of their health outcomes, health behaviors, and/or healthcare utilization patterns. Such differences, when supported by empirical research, are often attributed in part to immigrants' personal characteristics and in part to environmental exposures in their areas of origin and/or their areas of destination.

Although a growing body of research on this topic has presented substantial evidence in favor of a healthy migrant effect—that is, the tendency for immigrants to a given developed country to be, on average, healthier than the native-born despite

the fact that they often migrate from developing countries with comparatively high rates of morbidity and mortality—many such findings must be interpreted in the context of several limitations. First, as is the case with a number of immigration-related phenomena, a lack of suitable data has limited the questions that can be asked and the extent to which the resulting findings can be generalized to the immigrant population as a whole. Many studies rely on nonrepresentative data that focus on either a single ethnic group (i.e., Shapiro, 2011) or a group of immigrants from a common area of origin (i.e., Hovey & Magaña, 2000). While enlightening, such studies contribute relatively little to a general understanding of immigrant health in the U.S. Second, many studies fail to distinguish between different types of immigrants (Jasso et al., 2004) despite the fact that the American immigration system effectively stratifies applicants, awarding visas based on a wide variety individual and contextual factors (Jasso et al., 2004). Third, many studies on the healthy migrant effect focus on a single outcome, such as mortality or self-rated health (Hummer et al., 2007). Relying solely on the latter may be particularly problematic, as we shall discuss in more detail later. Finally, many researchers have, due often to data limitations, treated immigrant health as a static phenomenon, failing to consider the possibility that migrant health may change as a result of the migration process itself.

The current paper contributes to the existing literature on the healthy migrant effect in four ways. First, we use a nationally representative dataset in hopes of fleshing out the "big picture" of migrant health in the U.S. Second, we include as independent variables both visa category and area of origin, which allow us to test for

variations in health across different types of immigrants (i.e., refugees vs. those who came to the U.S. on work visas). Third, we employ a variety of health outcomes in our analyses, including self-rated health and a variety of chronic and/or degenerative conditions such as obesity and heart disease. Finally, we test for a possible change in migrant health over the course of the migration process by comparing premigration health to postmigration health.

The Healthy Immigrant Effect: Explanations, Implications and Limitations

While the fragmented nature of the literature on the healthy migrant effect often makes direct comparison difficult, the available evidence tends to support its existence. Indeed, a meta-analysis of 71 studies conducted by Cunningham, Ruben, & Narayan (2007) found that immigrants to the U.S. were less likely than native-born Americans to suffer from heart disease, hypertension, obesity, and cancers of the breast, prostate, and colon. Although the authors are careful to note that not all immigrant groups share the same advantages, and that said advantages tend to decrease with time in the U.S., they conclude that immigrants are, on average, healthier than the native-born. What is less clear, however, is why immigrants enjoy such an advantage. From a policy perspective, one might argue that health-screening practices on the part of receiving countries allow only the healthiest immigrants to enter. A life-course perspective, in contrast, might lead one to conclude that immigrants' premigration lifestyles are healthier than those of the native-born, a fact that puts them at a lower risk of developing certain chronic conditions such as heart

disease and Type 2 diabetes. A third possible explanation attributes the existence of a healthy migrant effect to self-selection on the part of immigrants (i.e., only the healthiest and wealthiest of a given population are willing and/or able to migrate). A fourth and final explanation holds that return migration artificially depresses the mortality rates of migrants in developed countries, in which case any mortality differential would be little more than a statistical artifact. The following sections will examine each of these potential explanations in turn, weighing the evidence in favor of each.

Immigrant Health Screenings

U.S. Immigration law, particularly the Immigration and Nationality Act and the Public Health Services Act, requires that all immigrants undergo a medical evaluation prior to arrival in the U.S. The primary purpose of this evaluation is to identify potential immigrants with inadmissible health-related conditions. Such conditions include having communicable diseases of public health significance (i.e., tuberculosis, syphilis, gonorrhea, and leprosy), failing to provide documentation of vaccinations against vaccine-preventable diseases, exhibiting a physical or mental disorder with some sort of associated harmful behavior and abusing or being addicted to controlled substances.

Given the stringent requirements that must be met in order to gain entry into the U.S., it is perhaps unsurprising that immigrants should enjoy better health than the native-born, many of whom would have failed the aforementioned medical exam had they been required to take it. But the question of how much of the so-called

healthy migrant effect can be attributed to immigrant health screenings is not as clear-cut as one might think. Laroche (2000) has shown that the number of migrants rejected due to poor health is relatively low, which casts doubt its plausibility as an explanation. Furthermore, in the case of the U.S., a substantial number of immigrants enter the country illegally, and therefore are only subjected to a health screening if and when they petition to adjust their immigration status (Blum et al., 1993). In spite of their avoiding the required medical exams, undocumented immigrants nonetheless exhibit the low morbidity and mortality rates that are indicative of the health migrant effect (Blum et al., 1993). In sum, there appears to be little empirical or theoretical support for this explanation.

Health and the Immigrant Lifestyle

The second explanation is based on the assumption that premigration life is in some way healthier than life in many developed nations. Supporters of this hypothesis speculate that many immigrants' premigration lifestyles required a certain amount of physical activity, which would have protected them from many of the negative health effects associated with the comparatively sedentary existences common in more developed countries. Some also speculate that many immigrants' premigration diets would have featured fewer processed foods and smaller portions than what is typically served in the U.S., both of which would contribute to better health. Others (i.e., Chou, 2009) argue that the broad familial and social networks enjoyed by migrants in their respective countries of origin contribute to their robust

health, a theory that also helps to explain the tendency for immigrant health to decline over time in the U.S.

There is some empirical evidence to support the notion that a healthy premigration lifestyle contributes to positive postmigration health outcomes. Corlin et al. (2014) found that Chinese immigrants to the U.S. were less likely to smoke and more likely to regularly engage in physical activity compared to the native-born. Furthermore, Chinese immigrants were shown to make healthier food choices, eschewing soda and sweets in favor of fruits and vegetables. Although the cross-sectional nature of the data used in this study limits the conclusions that can be drawn from it, the authors nonetheless speculate that these health behaviors were ingrained prior to immigration. This conclusion is bolstered by a number of studies that have observed similar phenomena in a variety of contexts. Blue and Fenelon (2011) observed that Hispanic migrants to the U.S. are much less likely to smoke than are native-born Americans, a fact that they claim explains 75% of their health advantage, which is colloquially known as the Hispanic paradox.

If the healthy immigrant effect is the result of good health habits ingrained prior to immigration, one might expect immigrants' health advantage to decline as they gradually assimilate into mainstream American culture. Indeed, some studies have shown just such a pattern. Although a complete review of the vast body of literature on acculturation and health is beyond the scope of this project, suffice it to say that a wealth of empirical evidence suggests that acculturation is negatively correlated with a wide variety of health outcomes and behaviors (for a more detailed

account of this phenomenon, see Abraído-Lanza et al., 2006). In other words, the longer immigrants stay in a given developed country, the smaller their advantage over the native-born becomes. Indeed, research has shown acculturation to be associated with a decline in self-rated health (Frisbie et al., 2001; Kennedy & McDonald, 2005), an increase in the risk of hypertension/obesity (Singh & Siahpush, 2002) and an increase in the prevalence of poor health behaviors such as smoking (Koya & Egede, 2007), to name a few.

All things considered, there is substantial theoretical and empirical evidence in support of the notion that premigration health behaviors are responsible for at least a portion of the healthy migrant effect. There are, however, two more hypotheses that must be addressed before we consider the project at hand.

Health as the Result of Self-Selection

The third potential explanation for the healthy immigrant effect has to do with the notion of immigrant self-selection on health. According to this theory, the physical and financial hardships associated with migration discourage the poor and/or sick from migrating, effectively removing them from the pool of potential migrants. As a result, those who do migrate represent only the healthiest and wealthiest individuals from a given country of origin. Taking for granted the strong, positive relationship between socioeconomic status and health, any health advantages enjoyed by immigrants would have less to do with their status as immigrants per se than with their relatively high socioeconomic status.

If this theory were accurate, one would expect to see differences between those who migrate and those who remain in the country of origin, and one would expect those differences to favor the former group. To an extent, the data tell just such a story. Not only are immigrants to developed countries more highly educated, on average, than the populations they leave behind, they are also frequently more highly educated than the native-born in their country of destination (Kennedy, McDonald, & Biddle, 2006). Furthermore, the migrant population often tends to be slightly younger and possesses more marketable skills compared to those who remain in the country of origin (Akee, 2010). Of course, a portion of this self-selection effect is likely due to immigration policy. Many countries, including the U.S., actively encourage young, educated professionals to immigrate (Kennedy, McDonald, & Biddle, 2006), so any evidence of self-selection must be considered in the context of such policies.

There are, however, some studies that would seem to call into question the universal applicability of this explanation—if not refute it altogether. Bostean (2012), for example, found that Mexican immigrants to the U.S. had poorer health, on average, than comparable groups in Mexico. Rubalcava et al. (2008) published a similar finding, identifying poor health as a predictor of migration in rural males and females. Finally, Abraido-Lanza et al. (1999) demonstrated marked differences in the relative health gaps of immigrants from different countries of origin, which one would not expect to see under the tenets of basic self-selection theory.

Overall, the evidence in favor of a self-selection effect on immigrant health is mixed. On the one hand, positively selected immigrants are often well off, especially compared to the population they leave behind. The notion that such individuals would enjoy a health advantage upon arriving in the U.S. makes intuitive sense. On the other, not all immigrants are positively selected on education, yet many groups of immigrants nonetheless demonstrate health advantages that belie their relatively low socioeconomic status (e.g., the Hispanic paradox).

The Healthy Immigrant Effect and the "Salmon Bias"

A fourth and final potential explanation postulates that any differential in mortality between immigrants and the native-born may be attributable to incomplete mortality data and/or other statistical artifacts. One such theory, known colloquially as the "salmon bias," argues that return migration effectively grants large numbers of immigrants a sort of statistical immortality (i.e., a given immigrant remains in the U.S. long enough to be counted as part of the population but then returns to his/her country of origin; as a result, his/her death is never recorded). Although this idea makes logical sense, especially when one considers the prevalence of seasonal migrant farm labor in the U.S. (Massey & Espinoza, 1997), there is little empirical data to support it. Abraido-Lanza et al. (1999) tested this theory by examining the health of immigrants for whom return migration was unlikely, such as Cubans, who are prohibited from returning to their home country, and Puerto Ricans, whose deaths are recorded in U.S. national mortality statistics. Even after eliminating the possibility of statistical bias resulting from return migration, participants in this study showed

lower mortality rates than their native-born counterparts despite their comparatively low socioeconomic status. Palloni and Arias (2004), however, conducted a similar study and were able to explain away much of the Hispanic mortality advantage by controlling for instances of return migration. In sum, the evidence in favor of the "salmon bias" is mixed.

The Current Study

Although a substantial body of literature supports the existence of a healthy migrant effect, there is still considerable debate as to which individual-level characteristics contribute most significantly to its existence. Furthermore, relatively little research has sought to examine how immigrant health might change as a result of the migration process itself. This chapter has two primary aims: assessing the relationships between a variety of individual-level characteristics and several different health outcomes, and determining which of said characteristics are most closely associated with a postmigration change in health (either improvement or decline).

Methods

Many of the variables used in this analysis—gender, employment, and visa category, to name a few—were described in detail in the methods section of the previous chapter. In the interest of brevity, those variables will not be described for a second time here. The variables that have not been used in previous analyses, however, are detailed below.

Dependent Variables

Self-rated health. The first dependent variable of interest is the respondent's self-rated health, which is determined by his or her answer to the question, "Would you say your health is excellent, very good, good, fair, or poor?" A plurality (35.99%) reported being in excellent health, while nearly as many respondents rated their health as being either very good (28.53%) or good (26.33%). A relatively small portion of the sample reported being in either fair (7.72%) or poor health (1.32%).

Obesity. The second dependent variable of interest is the respondent's weight. More specifically, we are interested in whether or not the respondent's BMI is greater than 30.0, which would qualify him or her as being obese. BMI was calculated by dividing each respondent's weight in kilograms by the square of his or her height in meters. The result was then coded dichotomously. Approximately one-fifth (19.51%) of the NIS sample met the criteria for being considered obese.

Diabetes. The third dependent variable of interest is the respondent's status as a Type 2 diabetic, which was determined via the respondent's answer to the question, "Has a doctor ever told you that you have diabetes or high blood sugar?" The age at which the respondent was diagnosed was then used to exclude those who were diagnosed as children (11 respondents), limiting somewhat the risk of conflating Type 1 and Type 2 diabetics. The resulting variable was then coded dichotomously, with just under 4% (3.87%) answering in the affirmative.

High blood pressure. The third dependent variable of interest is the respondents' cardiovascular health, for which blood pressure serves as a suitable measure. Each

respondent's blood pressure is assessed via the question, "Has a doctor ever told you that you have high blood pressure or hypertension?" This variable was then coded dichotomously; approximately one-tenth of the sample (9.47%) reporting having been diagnosed with high blood pressure.

Postmigration change in self-rated health. The final dependent variable of interest in this chapter is a change in postmigration health as assessed by the question, "Compared with your health right before you most recently came to the United States to live, would you say that your health is better now, about the same, or worse?" Approximately 21% of the sample (1,726 respondents) reported that their health had improved since coming to the U.S., while just over 70% (5,760 respondents) reported no change in health over the same time period. A small minority (9%, or 739 respondents) reported that their health had declined since arriving in the U.S.

Independent Variables

The lone independent variable that was not addressed in either Chapter II or Chapter III is the respondent's age squared, which is included in the block of demographic variables to account for the fact that the effect of age is not always linear (DeMaris, 1995).

Analytic Plan

Five series (one for each of the aforementioned outcomes) of five multivariate logistic regression models are used to assess their respective relationships with the aforementioned predictors. The first model includes only demographic characteristics,

while the second and third models consider the respondents' visa categories and health behaviors, respectively. The fourth model incorporates English-language fluency and the amount of time spent in the U.S. prior to taking the survey. The fifth and final model combines the predictors from models one through four to provide a more complete picture of their variables' relationships with self-rated health and a postmigration change in health. Because both self-rated health and a change in post migration health are composed of ordered groups, they will be assessed via ordered logistic regression, while standard logistic regression will be used to examine the three dichotomous outcomes.

Results

Examining the Healthy Migrant Effect: Self-Rated Health

The first set of analyses (summarized in Table 4.1) examines the relationships between a series of individual-level characteristics and self-rated health. Model 1 examines the association between various demographic characteristics—working full-time, gender, age, education, and marital status—and self-rated health. Full-time employment has a slight positive association with self-rated health (odds ratio = 1.02), but said association is not statistically significant. Gender plays a significant role in determining self-rated health; being male is associated with a 44% increase in the odds of being in better health (odds ratio = 1.44, $p < 0.001$). Neither age nor age squared is statistically significant, while the odds ratio for education (1.09, $p < 0.001$) suggests the each additional year of education is associated with a slight increase in

the odds of being in better health. Marital status shows no significant association with self-rated health.

Using family visa recipients as the reference category, Model 2 considers the respondents' visa category under the assumption that one's visa category can serve as a proxy measure for a variety of premigration experiences. Both employment and diversity visa recipients show a positive, statistically significant association with self-rated health. Indeed, their odds ratios (2.01 and 2.27, respectively, $p < 0.001$ in both cases) suggest that the odds of their being in better health are nearly double those of family visa recipients. The remaining two visa categories—humanitarian and legalization—also show statistically significant associations with self-rated health, albeit in the opposite direction. Having received a humanitarian visa is associated with a 19% decrease in the odds of being in better health (odds ratio = 0.81, $p < 0.05$) compared to the reference category, while having received a legalization visa is associated with a 27% decrease in same (odds ratio = 0.73, $p < 0.001$).

Model 3 shows considerable regional variation in the odds of being in good health. Compared to immigrants from Europe and Central Asia, those from South/East Asia and Latin America and the Caribbean display significantly lower odds of being in good health (odds ratios = 0.84 and 0.62, respectively, $p < 0.001$) in both cases, while those from North America (odds ratio = 1.81, $p < 0.001$), Sub-Saharan Africa (odds ratio = 1.94, $p < 0.001$), the Middle East/North Africa (odds ratio = 1.32, $p < 0.01$), and Oceania (odds ratio = 1.95, $p < 0.05$) show the exact

opposite. South America is the only dummy variable that shows no significant relationship with self-rated health.

Model 4 includes two variables that warrant consideration in the discussion of immigrant self-rated health: English-language proficiency and time spent in the U.S. The former shows a positive association with self-rated health; immigrants who speak English well or very well have much greater odds of being in better health (odds ratio = 2.97, $p < 0.001$) compared to those who speak English either poorly or not at all. Time in the U.S. is also statistically significant ($p < 0.001$), but its odds ratio (0.99) suggests only the slightest of negative associations.

Finally, Model 5 combines all of the abovementioned predictors into a single model. While the odds ratios and statistical significance of the demographic variables are similar to those in Model 1, the odds ratios and statistical significance of dummy variables representing the respondents' visa categories change somewhat upon adding the other variables. The employment category decreases in effect size yet remains statistically insiginficant (odds ratio = 0.98). The diversity category also saw its association decrease (odds ratio = 1.18), but it retains its statistical significance from Model 2. The humanitarian and legalization categories both show an increase in their relative effect sizes (odds ratio = 0.57 and 0.68, respectively), while the latter shows an increase in statistical significance as well ($p < 0.01$). Regarding the set of dummy variables denoting area of origin, only North America, Sub-Saharan Africa and retained their statistical significance, and their respective effect sizes decreased substantially. Finally, English-language proficiency saw its odds ratio decrease by

nearly half from what it was in Model 4, while time in the U.S. lost all statistical significance.

Examining the Healthy Migrant Effect: Obesity

The second series of analyses (summarized in Table 4.2) follow essentially the same progression as the first, but they use a different dependent variable: obesity, defined here as having a BMI greater than 30.0. Model 1 considers as independent variables the respondents' demographic characteristics. The only variable in this model that does not show a statistically significant association with obesity is full-time employment; the *p*-values of the other predictors all fall below the threshold of $p < 0.001$. Relative to women, men have lower odds of falling in the "obese" range of the BMI scale (odds ratio = 0.72). The relationship between age and obesity is also statistically significant, though the nature of that relationship appears to change over time. That the age variable is greater than one (odds ratio = 1.09) suggests a positive association with obesity, but the fact that the quadratic term (age squared) is slightly less than one hints at a decline in effect size over time. Educational attainment demonstrates a negative association with obesity (odds ratio = 0.92), as does being married or living in a marriage-like relationship (odds ratio = 0.84).

Using family visa recipients as the reference group, Model 2 examines the salience of visa category as a predictor of obesity. Both employment visa recipients and diversity visa recipients display a considerable advantage in terms of the odds of being obese (odds ratios = 0.38 and 0.59, respectively, $p < 0.001$ in both cases), while the opposite is true for legalization visa recipients (odds ratio = 1.56, $p < 0.001$).

There is no significant difference between family visa recipients and humanitarian visa recipients in regarding their respective odds of being obese.

Model 3 considers the possibility of an association between area of origin and obesity using immigrants from Europe and Central Asia as the reference group. Immigrants from South/East Asia and Latin America and the Caribbean are both significantly different from the reference category, albeit in different ways. In the case of the former, the odds ratio of 0.64 ($p < 0.001$) suggests that immigrants from that part of the world have lower odds of being obese, while the odds ratio of the latter (odds ratio = 2.43, $p < 0.001$) hints at a greater likelihood of same. With the exception of the lone respondent from the Arctic region, who was dropped from the model due to his or her not being obese, the other regions show are statistically insignificant.

Model 4 contemplates the relevance of two aspects of the immigration experience—English-language proficiency and time in the U.S.—to obesity. Compared to those who speak English either poorly or not at all, individuals with high levels of English-language proficiency have significantly lower odds of being obese (odds ratio = 0.49, $p < 0.001$). Somewhat surprisingly given the number of findings to the contrary, time spent living in the U.S. shows no significant association with obesity.

The final model combines the independent variables from Models 1-4 into a single logistic regression model. The block of variables representing the respondents' demographic characteristics show two noteworthy changes from Model 1: full-time

employment, which was not significant initially, now displays a significant, negative association with obesity. The opposite is true of marital status, which lost statistical significance in the full model. Regarding visa category, the dummy variable denoting employment visa recipients remains statistically significant ($p < 0.05$), but its effect size decreased significantly (odds ratio = 0.78). The other three categories all show significant change in the final model, as the dummy variables representing diversity and legalization visa recipients are no longer significant, while that representing humanitarian visa recipients now shows a significant, positive association with obesity. Aside from some slight variation in their respective effect sizes, the world region variables show very little change when incorporated into the final model. Finally, English-language proficiency is no longer statistically significant.

Examining the Healthy Migrant Effect: Diabetes

The respondents' demographic characteristics comprise the independent variables included in Model 1. Full-time employment shows a strong, negative association with diabetes (odds ratio = 0.65, $p < 0.01$) such that those who work full-time have significantly lower odds of having been diagnosed with the disease than either part-time workers or the unemployed. Age displays a significant, positive relationship with having been diagnosed with diabetes (odds ratio =1.22, $p < 0.001$), though the value and significance of age squared (odds ratio = 0.99, $p < 0.001$) suggests a slight decrease in the strength of said relationship over time. Like full-time employment, education demonstrates a significant, negative association with having

been diagnosed with diabetes (odds ratio = 0.96, $p < 0.01$), while neither sex nor marital status is significantly related to a having received such a diagnosis.

Model 2 includes only dummy variables denoting the respondents' respective visa categories. Relative to family visa recipients, both employment and diversity visa recipients have significantly decreased odds of having been diagnosed with diabetes. Humanitarian and legalization visa recipients, in contrast, show no significant association.

Model 3 considers the respondents' respective areas of origin. Compared to the reference category, respondents who immigrated from South/East Asia, North America, Latin America and the Caribbean, the Middle East/North Africa, and South America all show dramatically increased odds of having been diagnosed with diabetes (up to three times the odds in the case of immigrants from Latin America and the Caribbean). In contrast, neither the dummy variable representing Sub-Saharan Africa nor the dummy variable denoting Oceania is statistically significant.

English-language proficiency and time spent in the U.S. are each addressed in Model 4. Both variables display significant associations with having been diagnosed with diabetes, though the strength and directionality of their respective associations differ. The former shows a strong, negative correlation (odds ratio = 0.55, $p < 0.001$) while the effect of the latter appears to be negligible (odds ratio = 1.00, $p < 0.01$).

Model 5 includes all of the aforementioned predictors into a single logistic regression equation. Aside from education's losing its statistical significance, the block of demographic variables shows no noteworthy changes from Model 1. The

dummies representing the respondents' visa categories, in contrast, change substantially when added to the final model. Neither the employment nor the diversity categories is statistically significant any longer, while both the humanitarian and legalization categories now show an increased likelihood of having been diagnosed with diabetes. Save for the dummy variable for North America, which loses statistical significance, the group of variables representing region of origin show little change in the final model, while both English-language fluency and time in the U.S. lose all significance.

Examining the Healthy Migrant Effect: High Blood Pressure

The first model tests for an association between demographic characteristics and high blood pressure. Of the demographic variables considered, only full-time employment, age, and age squared show a significant association with having been diagnosed with high blood pressure. Full-time employment is negatively associated with high blood pressure (odds ratio = 0.81, $p < 0.05$), while age is positively associated with same (odds ratio = 1.15, $p < 0.001$), though the statistical significance of age squared suggests the relationship is not linear.

Model 2 examines the relationship between visa category and high blood pressure. As was the case with diabetes in the previous set of analyses, both employment visa recipients (odds ratio = 0.49, $p < 0.001$) and diversity visa recipients (odds ratio = 0.26, $p < 0.001$) have lower odds of having been diagnosed with high

blood pressure than do family visa recipients (the reference category). Humanitarian and legalization visa recipients, in contrast, show no significant association.

The possibility of an association between area of origin and high blood pressure is addressed in Model 3. Of the dummy variables representing area of origin, only Latin America and the Caribbean and Sub-Saharan Africa differ significantly from the reference group in terms of their respective odds of having been diagnosed with high blood pressure. The former group appears to have increased odds of having been diagnosed with high blood (odds ratio = 1.25, $p < 0.05$) pressure, while the opposite is true in the case of the latter (odds ratio = 0.67, $p < 0.05$).

Model 4 considers English-language proficiency and time spent in the U.S. High English-language proficiency is negatively associated with having been diagnosed with high blood pressure (odds ratio = 0.45, $p < 0.001$), while time in the U.S. appears to have little by way of a noteworthy relationship with the outcome despite its low p-value (odds ratio = 1.00, $p < 0.001$).

Model 5 incorporates all the aforementioned variables into a single logistic regression equation. For the most part, the demographic control variables show little change upon inclusion in the final model, though the effect size of full-time employment increases substantially (odds ratio = 0.68). Three of the four dummy variables denoting visa category change considerably from Model 2 to Model 5. The employment category is no longer significant, while the humanitarian (odds ratio = 1.53, $p < 0.05$) and legalization (odds ratio = 1.60, $p < 0.01$) categories both now show positive, statistically significant relationships with the odds of having been

diagnosed with high blood pressure. Area of origin also displays considerable change when incorporated into the final model; Latin America and the Caribbean, which were the only significant predictors in Model 3, become inconsequential, while the dummy representing South/East Asia now shows a significant, negative association with the outcome variable (odds ratio = 0.73, $p < 0.05$). As was the case with diabetes, neither English-language fluency nor time in the U.S. shows any significant relationship with having been diagnosed with high blood pressure.

Examining the Healthy Migrant Effect: Postmigration Changes in Health

Model 1 examines the association between demographic characteristics and a postmigration change in health. Full-time employment has a negative, statistically significant relationship with a change in postmigration health (odds ratio = 0.83, $p < 0.001$), which suggests that the odds of being in a higher category (i.e., either maintaining or improving upon premigration health status) are lower for immigrants who work full-time than they are for those who are either unemployed or work part-time. Being male, in contrast, shows a positive and statistically significant relationship with postmigration health, such that men have greater odds of either maintaining or improving their premigration health than do women (odds ratio = 1.117, $p < 0.001$). Neither age nor age squared is statistically significant, while both education (odds ratio = 0.97, $p < 0.001$) and marital status (odds ratio = 0.88, $p < 0.05$) show negative associations with a change in postmigration health.

Model 2 considers the respondents' visa category. Again using family visa recipients as the reference category, the model shows a negative, statistically significant association between receiving an employment visa and postmigration health (odds ratio = 0.78, $p < 0.001$). In other words, individuals who migrated on an employment visa have lower odds of either maintaining or improving their health compared to family visa recipients. The other visa categories (diversity, humanitarian, and legalization) are not statistically significant.

Model 3 utilizes the respondents' area of origin as a predictor of a change in postmigration health. Compared immigrants from Europe and Central Asia, those from South/East Asia (odds ratio = 1.19, $p < 0.05$), Latin America/the Caribbean (odd ratio = 1.27, $p < 0.01$), and the Middle East/North Africa (odds ratio = 1.32, $p < 0.05$) all display increased odds of maintaining or improving their health after migrating to the U.S. In contrast, those from North America, Sub-Saharan Africa, Oceania, and South America show no statistically significant differences.

Model 4 tests for an association between English-language fluency and time in the U.S. and a postmigration change in self-rated health. Both are statistically significant ($p < 0.05$ in both cases) but neither odds ratio deviates significantly from 1.0 (odds ratio = 0.90 and 0.99, respectively), suggesting only a modest association.

Finally, Model 5 combines all of the aforementioned predictors into a single ordered logistic regression model. While the demographic predictors show little change when compared to Model 1, the dummy variables denoting visa category do display some noteworthy variation in the final model. The odds ratio for

employment visa recipients decreases slightly in terms of its effect size (odds ratio = 0.85), and the odds ratio for diversity visa recipients increases while also gaining statistical significance (odds ratio = 1.18, $p < 0.05$). Regarding the respondents' areas of origin, only the dummy variable representing South/East Asia remains statistically significant, though it does display a significant increase in terms of effect size and statistical significance (odds ratio = 1.31, $p < 0.001$). Neither English-language fluency nor time in the U.S. is statistically significant in the final model.

Discussion and Conclusion

Generally speaking, the overall health of the sample (see Table 4.1) provides some support for the existence of a healthy migrant effect. These analyses also show, however, that not all immigrants are equally likely to view themselves as being in good health. Self-rated health, obesity, diabetes, and high blood pressure all vary according to a variety of individual-level characteristics—with gender, visa category and area of origin being particularly influential. Furthermore, these analyses show that self-rated health is not static, and that some immigrants are more likely than others to see their health either improve or decline. The following paragraphs highlight some key findings in addition to addressing their implications and limitations.

This study shows that sex is an important factor across several different health outcomes, with men being the beneficiaries in terms of self-rated health, obesity, and a postmigration change in self-rated health. These findings, while somewhat unexpected, are in line with some research on the relationship between gender and

health among immigrants. Some studies, such as that by Akresh and Frank (2008), suggest that men are more likely than women to be positively selected on the basis of health. In many migratory flows, women are more likely than men to have been preceded by a husband or partner, whose presence in the country of destination makes the journey and subsequent transition less stressful (Donato, 1993). As a result, one might expect poor health to be less of a deterrent to female migrants than it would be for their male counterparts. The positive association between maleness and improved postmigration health is harder to explain. Women may simply be doubly disadvantaged due to their being both female and foreign-born (Purdie-Vaughns & Eibach, 2008), which in turn exposes them to additional stressors (Purdie-Vaughns & Eibach, 2008). Another possible explanation is that post-migration health among females is simply more static than it is among males, which would also account for the increased odds of change in the latter group. In either case, more research will be necessary to fully understand this finding.

Also of interest is the association between full-time employment and health. On the one hand, the first two set of analyses show no significant association between employment and self-rated health or obesity, respectively. On the other, the subsequent series of analyses shows a persistent, negative association with diabetes, high blood pressure, and a change in postmigration self-rated health. One possible way to interpret this finding is by placing it in the context of the dual labor market theory of immigration, which divides the economy into two distinct sectors: the primary and the secondary. The so-called "primary" sector consists of high-paying,

relatively stable jobs, while low-paying jobs with few benefits and little opportunity for advancement comprise "secondary" labor market. According to Massey et al. (1993), developed countries such as the U.S. rely on immigrant labor to fill the secondary labor market, which in practice means that immigrants are called upon to take jobs that are too physically demanding, too dangerous, or too psychologically taxing to appeal to the native-born. Indeed, research has shown that immigrants are more likely than the native-born to take jobs that require manual labor, including repetitive movement and sitting/standing in awkward postures, both of which are associated with musculoskeletal problems and other injuries (Acury et al., 2014; Dong, Men, & Ringen, 2010). To the extent that new immigrants find themselves working in such jobs, the associated prevalence of manual labor and poor conditions make for a plausible explanation for the negative relationships between employment and post-migration health. A more conservative interpretation of this finding has to do more with how the final outcome variable is coded (i.e., better, about the same, worse) than it does with the working conditions in which the respondents find themselves. If, for instance, the full-time employed were already in excellent health prior to migrating, they would be less likely than either part-time workers or the unemployed to see their health improve after arriving in the U.S. In other words, limits to their growth would leave them nowhere to go but down.

Like gender and employment status, one's visa category, used here as a proxy measure to capture some premigration experiences, has a strong association with self-rated health, obesity, diabetes, and high blood pressure, particularly in the cases of

humanitarian and legalization visa recipients. Although they make up a relatively small portion of the immigrants admitted into the U.S. in any given year, membership in either group clearly makes one less likely to conform to the stereotype of the healthy migrant. What is less clear is why. Given that humanitarian visa recipients are often forced to leave their countries of origin due to discrimination and/or persecution, common sense dictates they are unlikely to benefit from any of the positive selection effects discussed above. The fact that the humanitarian visa recipients as a group are on par with the sample as a whole in terms of educational attainment, home ownership, and English-language fluency, however, suggests that they do not necessarily fit the profile of the poor, negatively selected refugee as described by Stark (2004). The explanation may lie in the stressors experienced by refugees prior to their arrival in the U.S., but more research will be required to test the veracity of this interpretation. Understanding the relationship between visa category and health for those in the legalization group may simply boil down to their comparatively low SES. Relative to every other visa category, legalization visa recipients are disadvantaged in terms of educational attainment, home ownership, and English-language fluency, all of which are highly correlated with poor health.

Another noteworthy finding has to do with the relationship between area of origin and health. While there appears to be no consistent pattern across the health outcomes addressed in this paper, immigrants from certain parts of the world clearly show advantages in some instances and disadvantages in others. Regarding self-rated health, migrants from North America, Sub-Saharan Africa, the Middle East/North

Africa, and South America all have significantly greater odds of reporting being in better health than do those from Europe/Central Asia. While at least a portion of that finding can be explained by cultural differences in the perception of health (i.e., the tendency of different groups to view similar conditions as being more or less detrimental to overall health as described in Tfaily & Soldo, 2005), regional differences appear in virtually every health outcome addressed in this paper. In terms of obesity, for example, immigrants from South/East Asia are significantly less likely to meet the criteria, while those from Latin America/the Caribbean are significantly more so. Both groups, meanwhile, join those from the Middle East and North Africa in being more likely than the reference group to have been diagnosed with diabetes, yet only those from South/East Asia demonstrate an advantage in terms of high blood pressure and a postmigration improvement in health. Potential explanations for such differentials are myriad and likely include both genetic and lifestyle factors. Further research will doubtlessly be necessary to arrive at a satisfactory explanation.

These findings should be understood in the context of several limitations. First, the data used in this study are cross-sectional in nature and therefore cannot be used to establish causality in any of the relationships described above. Second, these findings are hamstrung somewhat by imperfections in the outcome variables. Both self-rated health and changes in self-rated health are highly subjective, and the latter also suffers from recall bias. Although self-rated health has been shown to be highly correlated with a wide array of less subjective outcomes (Benyamini & Idler, 1999; Frankenberg & Jones, 2003; Idler & Benyamini, 1997; Kuhn et al., 2004; Rahman &

Barsky, 2003; Zimmer et al., 2000), a growing body of literature suggests that cultural and linguistic differences in how health is interpreted may limit its efficacy when used with diverse samples (Wagner et al., 1998). The other outcomes—obesity, diabetes and high blood pressure—are less subjective, but are not without problems of their own. Despite its widespread usage, BMI is understood to be a flawed measure of body composition, as is susceptible to distortion due to variations in age and gender (Cole et al., 2000). Similarly, the measures of diabetes and high blood pressure are limited in that each requires a diagnosis in order for the respondent to have answered in the affirmative, effectively ignoring the possibility that either condition could be undiagnosed.

In spite of these limitations, however, this study contributes to the literature on the healthy migrant effect by testing predictors of migrant health over a variety of health outcomes, including self-rated health, obesity, diabetes, and high blood pressure. Furthermore, this study demonstrates considerable variability in health across a variety of individual-level characteristics, including gender, visa category, and area of origin. Such findings suggest that not all immigrants are equally likely to benefit from the healthy migrant effect.

Table 4.1: Individual-Level Predictors of Postmigration Self-Rated Health

	Model 1	Model 2	Model 3	Model 4	Model 5
Demographic Variables					
Works Full-Time	1.02				1.06
	(0.05)				(0.05)
Male	1.44***				1.37***
	(0.06)				(0.06)
Age	1.00				1.01
	(0.01)				(0.01)
Age Squared	1.00				1.00***
	(0.01)				(0.01)
Education	1.09***				1.05***
	(0.004)				(0.01)
Married	0.97				0.95
	(0.05)				(0.05)
Visa Categories (Reference = Family)					
Employment Visa		2.01***			0.98
		(0.11)			(0.06)
Diversity Visa		2.27***			1.18*
		(0.13)			(0.09)
Humanitarian Visa		0.81*			0.56***
		(0.07)			(0.05)
Legalization Visa		0.73***			0.68***
		(0.06)			(0.06)
Area of Origin (Reference = Europe)					
South/East Asia			0.84**		1.02
			(0.05)		(0.07)
North America			1.81***		1.37*
			(0.25)		(0.21)
Latin America/the Caribbean			0.62***		1.06
			(0.04)		(0.08)
Sub-Saharan Africa			1.94***		1.78***
			(0.17)		(0.17)
Middle East/North Africa			1.33**		1.43**
			(0.14)		(0.15)
Oceania			1.95*		1.10
			(0.54)		(0.39)
South America			0.93		1.32*
			(0.12)		(0.18)
Migration Variables					
English Fluency				2.79***	1.56***
				(0.12)	(0.08)
Time in the U.S.				0.99***	1.00
				(0.0005)	(0.01)
Standard errors in parentheses; * p<.05, ** p<.01, *** p<.001					

Table 4.2: Individual-Level Predictors of Obesity

	Model 1	Model 2	Model 3	Model 4	Model 5
Demographic Variables					
Works Full-Time	0.94				0.87*
	(0.06)				(0.06)
Male	0.72***				0.72***
	(0.04)				(0.05)
Age	1.08***				1.10***
	(0.01)				(0.01)
Age Squared	0.99***				0.99***
	(0.01)				(0.01)
Education	0.92***				0.96***
	(0.01)				(0.01)
Married	0.83**				0.95
	(0.05)				(0.06)
Visa Categories (Reference = Family)					
Employment Visa		0.37***			0.79*
		(0.03)			(0.09)
Diversity Visa		0.59***			1.08
		(0.05)			(0.12)
Humanitarian Visa		01.03			1.29*
		(0.11)			(0.16)
Legalization Visa		1.56***			1.03
		(0.14)			(0.11)
Area of Origin (Reference = Europe)					
South/East Asia			0.64***		0.55***
			(0.06)		(0.06)
North America			1.15		1.24
			(0.22)		(0.28)
Latin America/the Caribbean			2.43***		1.96***
			(0.20)		(0.21)
Sub-Saharan Africa			1.12		1.10
			(0.14)		(0.15)
Middle East/North Africa			1.28		1.29
			(0.19)		(0.20)
Oceania			0.64		0.72
			(0.30)		(0.46)
South America			1.18		0.97
			(0.22)		(0.19)
Migration Variables					
English Fluency				0.49***	1.04
				(0.03)	(0.09)
Time in the U.S.				01.00	1.00**
				(0.01)	(0.01)
Standard errors in parentheses * $p<.05$, ** $p<.01$, *** $p<.001$					

Table 4.3: Individual-Level Predictors of a Diabetes Diagnosis

	Model 1	Model 2	Model 3	Model 4	Model 5
Demographic Variables					
Works Full-Time	0.65**				0.57***
	(0.09)				(0.10)
Male	1.12				1.10
	(0.14)				(0.15)
Age	1.22***				1.20***
	(0.03)				(0.03)
Age Squared	0.99***				0.99***
	(0.01)				(0.01)
Education	0.97**				0.97
	(0.01)				(0.01)
Married	0.93				1.02
	(0.12)				(0.15)
Visa Categories (Reference = Family)					
Employment Visa		0.43***			1.10
		(0.08)			(0.24)
Diversity Visa		0.30***			1.00
		(0.07)			(0.28)
Humanitarian Visa		1.11			1.82*
		(0.22)			(0.45)
Legalization Visa		1.09			1.76*
		(0.20)			(0.39)
Area of Origin (Reference = Europe)					
South/East Asia			2.29***		01.72*
			(0.55)		(0.45)
North America			2.71*		1.96
			(0.09)		(0.28)
Latin America/the Caribbean			3.30***		2.50***
			(0.76)		(0.68)
Sub-Saharan Africa			1.66		1.82
			(0.14)		(0.61)
Middle East/North Africa			3.07***		3.35***
			(0.98)		(0.99)
Oceania			1.30		2.37
			(0.34)		(0.96)
South America			2.69*		2.01
			(0.94)		(0.84)
Migration Variables					
English Fluency				0.55***	1.38
				(0.07)	(0.23)
Time in the U.S.				01.00**	1.00
				(0.01)	(0.01)
tandard errors in parentheses * p<.05, **p<.01, ***p<.001					

Table 4.4: Individual-Level Predictors of a High Blood Pressure Diagnosis

	Model 1	Model 2	Model 3	Model 4	Model 5
Demographic Variables					
Works Full-Time	0.81*				0.68***
	(0.08)				(0.07)
Male	1.05				1.09
	(0.09)				(0.10)
Age	1.15***				1.14***
	(0.02)				(0.02)
Age Squared	0.99***				0.99***
	(0.01)				(0.01)
Education	0.99				1.00
	(0.01)				(0.01)
Married	0.90				0.92
	(0.08)				(0.09)
Visa Categories (Reference = Family)					
Employment Visa		0.49***			1.14
		(0.05)			(0.17)
Diversity Visa		0.26***			0.61*
		(0.07)			(0.12)
Humanitarian Visa		1.13			1.53*
		(0.15)			(0.26)
Legalization Visa		0.86			1.60**
		(0.20)			(0.27)
Area of Origin (Reference = Europe)					
South/East Asia			1.10		0.73*
			(0.13)		(0.11)
North America			1.10		0.81
			(0.28)		(0.27)
Latin America/the Caribbean			1.25*		0.88
			(0.14)		(0.14)
Sub-Saharan Africa			0.67*		0.85
			(0.12)		(0.18)
Middle East/North Africa			0.68		0.73
			(0.15)		(0.18)
Oceania			0.96		0.35
			(0.51)		(0.38)
South America			1.36		0.89
			(0.31)		(0.23)
Migration Variables					
English Fluency				0.44***	0.96
				(0.03)	(0.11)
Time in the U.S.				01.00**	1.00
				(0.01)	(0.01)
Standard errors in parentheses * p<.05, ** p<.01, *** p<.001					

Table 4.5: Individual-Level Predictors of a Postmigration Change in Health

	Model 1	Model 2	Model 3	Model 4	Model 5
Demographic Variables					
Works Full-Time	0.83***				0.84**
	(0.04)				(0.05)
Male	1.17***				1.17**
	(0.06)				(0.06)
Age	1.00				1.00
	(0.01)				(0.01)
Age Squared	1.00				1.00
	(0.01)				(0.01)
Education	0.97***				0.97***
	(0.01)				(0.01)
Married	0.88*				0.88*
	(0.05)				(0.04)
Visa Categories (Reference = Family)					
Employment Visa		0.78***			0.85*
		(0.05)			(0.06)
Diversity Visa		1.05			1.18*
		(0.07)			(0.10)
Humanitarian Visa		0.87			1.02
		(0.09)			(0.11)
Legalization Visa		1.17			1.15
		(0.11)			(0.12)
Area of Origin (Reference = Europe)					
South/East Asia			1.19*		1.31***
			(0.09)		(0.11)
North America			0.96		1.21
			(0.16)		(0.22)
Latin America/the Caribbean			1.27**		1.17
			(0.09)		(0.11)
Sub-Saharan Africa			1.14		0.95
			(0.07)		(0.10)
Middle East/North Africa			1.32*		1.27
			(0.16)		(0.16)
Oceania			1.01		1.11
			(0.13)		(0.49)
South America			0.96		0.99
			(0.15)		(0.16)
Migration Variables					
English Fluency				0.90*	1.08
				(0.04)	(0.06)
Time in the U.S.				0.99*	1.00
				(0.01)	(0.01)
Standard errors in parentheses * p<.05, ** p<.01, *** p<.001					

CHAPTER V

RELIGIOUS INVOLVEMENT, SOCIAL INTEGRATION, AND HEALTH OVER THE COURSE OF THE MIGRATION PROCESS

Introduction

Over the last several years, dozens of articles and books have examined the association between social integration and positive health outcomes. It is now widely accepted that social relationships and group affiliation can exert powerful effects on both physical and mental health. While research in this area has been around for some time—Durkheim famously examined the connection between social integration and mortality in the seminal study *Suicide* (1951 [1897])—more recent work has sought to identify specific pathways through which social integration affects health and the social contexts in which it is most effective.

Having used the previous two chapters to examine changes in religious service attendance (Chapter III) and health (Chapter IV) over the course of the migration process, this final analytical chapter seeks to build upon the aforementioned analyses by testing for an association between religiously based social networks and a variety of health outcomes. Specifically, we address three research questions. First, what role, if any, does religious social capital—defined again as frequency of religious

service attendance, identifying as a member of a religious denomination, and belonging to a religious congregation—play in determining the health outcomes discussed in the previous chapter? Second, is the association between religious social capital and health limited to measures of physical health, or does it extent to post-migration mental health as well? Finally, does the association between religion and health persist after controlling for other forms of social capital?

In addition to laying the theoretical groundwork necessary to answer these questions, the following sections provide an overview of the existing research on the relationship between religious social capital and health. Furthermore, the following sections evaluate the extent to which such findings are applicable to a population of recent immigrants to the United States.

Background and Theoretical Framework

Although there is no shortage of research on the association between religion and health, the relevance of many such studies to the questions at hand is limited by three factors. First, as mentioned previously, the conceptualization and operationalization of religion or religious involvement tend to be idiosyncratic, varying widely from one study to the next. Many such studies approach religion in a global sense rather than examining individual aspects of the religious experience (Shapiro, 2011). Indeed, very little research focuses exclusively on the social aspects of religion (Shapiro, 2011). Second, many studies have used relatively narrow definitions of social capital and/or social integration, and as a result have given little consideration to the possibility of individual and contextual limitations on the utility

of social capital as a determinant of health (Berkman et al., 2000). Finally, few have sought to investigate whether or not the association between religion and health is the same for recent immigrants as it is for the general population despite the fact that substantial qualitative research suggests that the social networks created via religious involvement may play a particularly salient role as predictors of physical and mental health among an immigrant population (Badr, 2000; Ebaugh & Chafetz, 2000).

In an attempt to incorporate the disparate lines of research on the connection between social capital and health into a single, overarching theoretical framework, Berkman et al. (2000) identified four primary pathways through which social networks may affect health on an individual level. The four pathways are (1) social support; (2) social influence; (3) social engagement and attachment; and (4) access to resources and material goods. While this new theoretical framework was not designed with an immigrant population in mind, nor did its creators mean for it to be applied specifically to social networks that exist within a religious context, the centrality of religion to the experience of some immigrants could make faith-based social networks uniquely powerful determinants of migrant health. The following sections support this point by placing the immigrant religious experience within the context of the framework devised by Berkman et al. (2000).

Social Support

The term "social support" can take on a variety of meanings. Emotional support, for example, is often defined as "love and caring, sympathy and understanding and/or esteem or value available from others" (Thoits, 1995, p. 77),

while instrumental support refers to aid or assistance with tangible needs such as getting groceries and paying bills. In the case of the former, a close friend or confidant typically offers such social support, while any number of individuals or organizations—not all of which need be intimately connected to the recipient—can offer the latter. Given that many faiths consider caring for the poor and less fortunate to be part of their greater purpose, it should come as no surprise that many religious organizations offer multiple forms of social support to those in need, particularly in the case of refugees and other immigrants.

Regarding the association between social integration and emotional support, some social theorists have argued that good mental health—whether conceptualized in terms of subjective well-being, overall happiness or freedom from mental illness—may be more dependent on the breadth and depth of one's social connections than it is on one's socioeconomic status (Putnam, 2002). And there is reason to believe that the social connections fostered in a religious context in particular are associated with positive health outcomes. Indeed, research as shown that frequency of religious service attendance is negatively related to psychological distress and positively associated with life satisfaction, and general happiness (Schieman, Bierman, & Ellison, 2012). Moreover, there is evidence that religious social networks are particularly rich in anticipated social support, which is "the belief that social network members will provide assistance in the future should the need arise" (Krause, 2006, p. 126; Aneshensel et al., 2012).

Regarding instrumental support, among the most widely recognized faith-based providers is the St. Vincent de Paul Society, an organization run by the Catholic Church that offers social services to members in need (Ebaugh & Chafetz, 2000). Such support takes the form of everything from food to low-interest loans. Some of the aid offered by the Vincentians is expressly for the benefit of immigrants; a group of Vietnamese converts and recent immigrants to the United States "told of a variety of things that the church hierarchy did before and after they left their homeland (e.g., helping with I.N.S. paperwork) and also of ESL, GED, and citizenship classes, a job hotline, transportation, housing, and links to immigration attorneys" (Ebaugh & Chafetz, p. 332). The St. Vincent de Paul Society, however, is not active in all Catholic parishes, and congregations in which it not active are more likely to act as facilitators, referring their members to other social welfare organizations as opposed to providing social services directly (Sullivan, 2000).

Of course, not all congregations are able to match the array of services offered by the Catholic Church, nor are all faiths equally likely to view the provision of formal social services to be within the purview of a religious organization. Many of the Protestant churches that cater to recent immigrants, for example, are not as well established in the U.S. and therefore lack the wealth of resources on which the Vincentians are able to draw (Cook, 2000). Despite this lack of resources, the members are nonetheless able to rely on each other for assistance in times of need (Foley & Hoge, 2007). This reliance on informal networking is also the primary

means by which Buddhists and Hindus meet the needs of their communities, as neither group has any such tradition of offering formal social services (Huynh, 2000).

Social Influence

Membership in a group can exert considerable influence on the attitudes and behaviors of an individual, especially when he or she is trying to "feel out" a new or ambiguous set of circumstances, such as adjusting to life in the United States. According to Erickson (1988 p. 137), "people obtain normative guidance by comparing their attitudes with those of a reference group of similar others. Attitudes are confirmed and reinforced when they are shared with the comparison group but altered when they are discrepant." In other words, belonging to a group—religious or otherwise—play an important role in establishing an individual's norms and values. The influence of a religious group may be particularly relevant in regard to health behaviors. Many religions require that their members adhere to strict dietary and behavioral guidelines, many of which can lead to better overall health (Seybold & Hill, 2001). Members of the LDS Church, for example, are expected to avoid alcohol and tobacco, while Seventh Day Adventists are overwhelmingly vegetarian (Fraser, 1999). Furthermore, many religious groups have prohibitions against potentially risky behaviors such as promiscuous sex and illicit drug use (Sinha, Cnaan, & Gelles, 2007). Although the social influence exerted by membership in a religious group is likely to be detrimental at times—Quinn and Utz (forthcoming), for example, found high levels of religious involvement to be negatively associated with seeking help for

existing mental health issues—it nonetheless remains an important pathway through which social integration affects health outcomes.

Social Engagement and Attachment

Social engagement, according to Berkman et al. (2000) is the result of "the enactment of potential ties in real life activity" (p. 17). In other words, meeting with friends, attending social functions, participating in voluntary associations, and church attendance are all examples of social engagement. Active social engagement, in turn, provides a sense of belonging, value, and, ultimately, attachment. While membership in any group can, theoretically, provide an individual with such a sense of belonging, there is reason to believe that religious involvement offers unique opportunities social engagement, especially as far as recent immigrants are concerned.

Immigrants, particularly those who identify as members of minority religions, sometimes find themselves drawn into an ad-hoc community as they pool their resources to create a place of worship. Case studies (see Huynh, 2000, for examples) of Buddhist and Hindu temples in the United States tell different versions of what is essentially the same story. Recent immigrants, motivated by a desire to practice their faith according to the traditions of their country of origin, join forces with one another to build a house of worship. This process, which often entails agreeing on a location, purchasing or renting real estate, constructing the space itself (either from the ground up or by refurbishing an existing structure), and hiring clergy to staff it, contributes to the formation of a community in at least two ways. First, the sheer amount of time, energy, and capital necessary to undertake a project such as this

requires that members of the faith reach out to potentially interested parties, fostering the creation of a social network in the process. Second, even after the construction of the temple or church is completed, those who participated in its construction often feel as though they have a vested interest in its growth and maintenance, which in turn makes them more likely to attend regularly and maintain contact with their fellow members.

Additionally, such houses of worship often take on functions that would be considered both unusual and unnecessary in other parts of the world. Islam, for example, emphasizes the importance of brotherhood amongst its members, but adherence to this ideal often requires additional effort on the part of mosques in areas where Muslims constitute a minority. Whereas mosques in predominantly Muslim countries tend to function exclusively as a place to pray, many in the United States—particularly those dedicated to serving immigrant communities—have taken on an expanded role, providing a space where members can meet socially as well. Badr (2000), for example, describes a mosque outside Houston, Texas that features both a social hall and a basketball court.

Finally, religion, regardless of denomination, can be a powerful force in helping immigrants maintain a sense of ethnic identity, particularly in situations where immigrants have gone from being part of the majority faith in their countries of origin to being part of a religious minority in the United States. Many immigrants view their respective mosques, temples, and churches as places where they can gather with others who share their language, culture, and traditions (Yang & Ebaugh, 2001).

This feeling of comfort can encourage immigrants to attend religious services in their host countries, perhaps even with greater frequency than they did in their countries of origin (Yang & Ebaugh, 2001).

The cultural milieu in which immigrants find themselves can also lead to a heightened sense of ethnic identity, particularly in cases where they have gone from being part of the majority religion in their countries of origin to a minority in the United States. This shift from majority to minority can alter an individual's attitude toward his or her faith in at least two ways. In some cases, becoming part of the minority motivates immigrants to deepen their commitment to their faith, becoming more knowledgeable about religious doctrine, and going to great lengths to attend services regularly. From an organizational perspective, minority religious groups may actively work to educate not only members but also the surrounding community about their beliefs (Ebaugh & Chafetz, 2000). On the other hand, some immigrants try to avoid occupying double minority status—ethnic as well as religious—by seeking out an ethnic version of the dominant faith (Ebaugh & Chafetz, 2000). Such religions, of which Chinese and Korean Protestant congregations are examples, allow immigrants to interact with individuals of a similar ethnic and cultural background while also embodying a sense of American-ness.

Access to Material Goods/Resources

In the conceptualization of Berkman et al. (2000), access to material goods and resources refers to social ties that "facilitate the diffusion of influence and information, and provide opportunities for upward social mobility" (p. 850). While

research on faith-based social networks as a mechanism for facilitating access to social and economic opportunities is sparse, recent qualitative research has identified some examples of this principle in action. Some immigrant congregations, for example, promote English language fluency by holding services primarily or exclusively in English and/or offering ESL classes. Sullivan (2000), for example, describes a Catholic parish in Houston that purposely holds Spanish-language mass at inconvenient times as a means of encouraging its predominantly foreign-born members to learn English. Similarly, some immigrant congregations have been known to establish programs designed to help new arrivals find work and a place to live (Chaves & Tsitsos, 2001).

The Measurement of Social Capital and Social Integration

Although the work done by Berkman et al. represents considerable progress in identifying pathways through which social integration may affect health, there remains much work to be done in terms of effectively conceptualizing and operationalizing measures of social capital. Since the publication of Putnam's seminal work, *Bowling Alone*, much of the literature on social capital has focused on voluntary associations (i.e., unions, parent/teacher associations and Rotary Clubs, to name a few) as spaces in which networks are created and nurtured. Because many such organizations collect membership dues, elect officers, and keep membership rolls, social capital generated in such contexts is often referred to as formal social capital (Putnam, 2002). It bears mentioning, however, that voluntary associations—and, by extension, the formal social capital generated therein—represents only one form of

social capital. Informal social capital, in contrast, refers to the networks and relationships that develop via participation in family dinners, pick-up basketball games, Internet chat rooms, and the like (Putnam, 2002).

This distinction between formal and informal social capital is important to keep in mind, particularly when examining social capital in different cultural contexts and across socioeconomic strata. As Teney and Hanquinet astutely note, Bourdieu's (1985) understanding of social capital as being associated with social determinants, such as socioeconomic status and cultural capital, makes an important connection between social capital and the larger issue of socioeconomic inequality: individuals have access to certain types of social capital because of the social statuses they occupy and the roles they play. Li et al. (2005), for instance, demonstrated that individuals of low socioeconomic status are more likely to draw on informal relationships for social capital, while those in the middle and upper classes are more likely to be involved in voluntary associations. Failure to note this distinction may have serious methodological consequences, as focusing primarily on formal social capital may have the unintended consequence of systematically underestimating the extent of the social networks connecting immigrants, minorities, and other individuals of low socioeconomic status. Or, in the words of Teney and Hanquinet (2012), "the forms of social capital possessed by more disadvantaged social groups might remain invisible if the study focuses solely on participation in voluntary associations" (p. 1215).

Methods

Dependent Variables

The analyses in this chapter use as dependent variables five related but distinct measures of immigrant health: (1) premigration self-rated health; (2) postmigration self-rated health; (3) a change in postmigration self-rated health; (4) instances of postmigration depressive symptoms; and (5) obesity. What follows is a brief description of premigration self-rated health and postmigration depressive symptoms; the other three variables were addressed in the previous chapter and will not be covered in detail here.

Premigration health. Premigration health was assessed via the respondent's answer to the question, "At the time of that first filing that started the process for the immigrant visa that you now have, would you say your health was excellent, very good, good, fair, or poor?" Nearly half (44.47%) of the sample reported being in excellent health, while 30.88% reported being in good very good health. Just over one-fifth (21.03%) reported being in good health, while relatively small minorities reported being in either fair or poor health (3.16% and 0.46%, respectively).

Depressive symptoms. The presence or absence of depressive symptoms was determined by each respondent's answer to the question, "During the past 12 months, was there ever a time when you felt sad, blue, or depressed for two weeks or more in a row?" The vast majority or respondents (87.52%) responded in the negative, while 12.48% responded in the affirmative.

Independent Variables: Religious Involvement

The four religious involvement variables to be included in this study are pre-migration frequency of religious service attendance, postmigration frequency of religious service attendance, belonging to a congregation, and identifying as a member of a religious denomination. Of those variables, the first three have been described in detail elsewhere and will not be rehashed here. The fourth variable, that of identifying oneself as a member of a religious denomination, was created by collapsing the measures of denomination discussed in Chapters II and III into a single, dichotomous measure in order to test for differences in health between those who identify with a religious denomination and those who do not.

Independent Variables: Social Capital

In addition to measures of religious involvement, the following analyses include measures of nonreligious social integration. Although data limitations did not allow for the use of identical variables in the pre- and postmigration analyses, the following measures nonetheless provide a serviceable notion of the extent of the respondents' social integration both before and after moving to the U.S.

Premigration social capital. Measures of nonreligious, premigration repositories of social capital include the following yes/no items:

- Donated to a labor union
- Donated to a professional organization
- Donated to a charitable organization

- Belonged to a sporting or recreational association
- Belonged to a social club or community group
- Donated to an ethnic or national origin association
- Talked politics with friends
- Signed a political petition
- Contacted a public official
- Attended a public meeting
- Supported a political party or candidate
- Worked for a political party or candidate
- Gave money to a political party or candidate

Taken together, these 13 items boast an alpha of 0.78, which not only suggests that they are measuring the same underlying concept, but will also allow them to be combined into a single index for the sake of analytic parsimony.

Postmigration social capital. Because none of the questions measuring pre-migration social capital are asked with respect to the respondents' postmigration lives, measures of nonreligious, postmigration social integration are slightly different and include:

- Belongs to a union
- Lives with spouse and/or children
- Lives with other adults (spouse not included)
- Knows the name of the U.S. President

- Knows the name of the Secretary of State
- Knows the name of the Speaker of the House
- Knows the name of the Chief Justice of the Supreme Court

The first three items (belonging to a union, living with one's spouse and/or children and living with other adults) are each measured individually and dichotomously, while the final four items (knowing the name of the President, Secretary of State, Speaker of the House, and Chief Justice of the Supreme Court) are combined into an index of political involvement. With an alpha level of 0.69, the combination of these four items falls at the low end of the acceptable range (Norusis, 2008).

Independent Variables: Controls

The following analyses include as control variables the respondents' demographic characteristics (employment status, sex, age, age squared, education, and marital status), visa categories and areas of origin, all of which were covered at a more granular level in previous chapters.

Analytic Plan

Five series (one for each of the aforementioned outcomes) of five multivariate logistic regression models are used to assess their respective relationships with the aforementioned predictors. All five analyses will follow essentially the same stepwise progression. The first models will include only measures of religious involvement and the blocks of variables that showed statistical significance in Chapter IV

(demographic characteristics, visa category, and area of origin). The second models will leave the control variable in place while swapping the measures of religious involvement with the measures of nonreligious social capital. The third models will incorporate all of the aforementioned predictors into a single logistic regression equation. Because ordered groups comprise the outcomes of premigration self-rated health, they will be assessed via ordered logistic regression, while standard logistic regression will be used to examine the two dichotomous outcomes (depressive episodes and obesity).

Results

Religious Involvement, Social Capital, and Premigration Physical Health

The first set of analyses, (summarized in Table 5.1) test for an association between two sources of religious social capital—regular religious service attendance and identifying with a particular denomination—and premigration self-rated health net of more traditional measures of social capital and the respondents' demographic characteristics. Model 1, which examines the religious variables of interest, the demographic controls, and area of origin, demonstrates a significant, positive association between identifying with a religious denomination and premigration health (odds ratio = 1.29, $p < 0.001$). In other words, identifying oneself as a member of a specific denomination is associated with a 29% increase in the odds of being in better health compared to those who claim no such religious affiliation.

Regular religious service attendance, in contrast, shows no significant relationship with self-rated health.

Regarding the demographic variables, the dummy variable used to indicate one's being male (odds ratio = 1.29, $p < 0.001$) demonstrates a significant, positive association with self-rated health, suggesting a relative advantage over females. Age squared shows a statistically significant relationship with self-rated health (odds ratio = 1.00, $p < 0.001$), though an odds ratio of 1.00 is indicative of a negligible association between the two variables. The association between education and self-rated health is both positive and statistically significant (odds ratio = 1.06, $p < 0.001$), while the relationship between marital status and self-rated health is not statistically significant. Turning now to area of origin, those from North America (odds ratio = 1.50, $p < 0.01$), Sub-Saharan Africa (odds ratio = 1.92, $p < 0.01$), and the Middle East/North Africa (odds ratio = 1.35, $p < 0.01$) all appear to have greater odds of being in better health than those from the reference group.

Model 2 keeps the demographic and area of origin variables in place while swapping the measures of religious participation for an index of more general social involvement. The odds ratios and statistical significance of the demographic controls remain largely unchanged from Model 1, but the relationship between the social capital index and self-rated health is, somewhat unexpectedly, weak (odds ratio = 1.02) and statistically insignificant. The same pattern reappears in the third and final model; the odds ratios and statistical significance of the predictors that comprised Model 1 (including the dummy variable used to indicate those who identify as a

member of a religious denomination) see little to no change, while the index of non-religious social involvement remains statistically insignificant and unremarkable in terms of effect size.

Religious Involvement, Social Capital, and Postmigration Physical Health

The second set of analyses, which are summarized in Table 5.2, are conceptually similar to the analyses described in the previous two paragraphs. The ultimate goal is still to test for an association between social capital generated in a religious context and self-rated health while controlling for demographic characteristics and other forms of social capital, only now the focus has shifted from premigration health and social capital to postmigration measures of same. Additionally, the forthcoming models incorporate area of origin and visa category as independent variables. English-language fluency and time in the U.S. were also considered, but they were dropped due to their persistent statistical insignificance in Chapter IV and in subsequent supplementary analyses.

Religious involvement, demographic characteristics, visa category, and area of origin comprise the variables tested in Model 1. Although neither the frequency of religious service attendance nor identifying as a member of a religious denomination shows a significant association with self-rated postmigration health, belonging to a religious congregation does, albeit in an unexpected direction. The odds ratio associated with belonging to a religious congregation (0.89, $p < 0.05$) indicates that those who consider themselves a member of a religious congregation are at a slight

disadvantage compared to those who do not in terms of the odds of being in better health. Regarding the demographic controls, full-time employment, being male, and educational attainment all show significant, positive associations of varying strength with the odds of being in better health, while neither age nor age squared appear to have much of a relationship with the outcomes. Marital status, meanwhile, shows no significant relationship.

This model also highlights significant differences in self-rated health by both visa category and area of origin. Relative to family visa recipients, humanitarian (odds ratio = 0.56, $p < 0.001$) and legalization (odds ratio = 0.73, $p < 0.01$) visa recipients have much lower odds of reporting being in better health. Additionally, as was the case with premigration health, migrants from North America (odds ratio = 1.71, $p < 0.001$), Sub-Saharan Africa (odds ratio = 1.97, $p < 0.001$), and the Middle East/North Africa (odds ratio = 1.29) all enjoy an advantage over migrants from Europe/Central Asia in terms of the odds of being in good health.

Following a similar progression to that used in the first set of analyses, Model 2 leaves the demographic controls, visa category, and area of origin in place while swapping the indicators of religious involvement for measures of nonreligious social capital. Although the variables that were held over from Model 1 display only negligible fluctuations in effect size, some of the indicators of social capital show significant relationships with self-rated health. Neither belonging to a union nor having children in the home is significantly associated with the odds of being in better health, but living in a household with multiple adults shows a slight negative

association with same (odds ratio = 0.97, $p < 0.01$). Political involvement, on the other hand, is significantly and positively related to the odds of being in better health (odds ratio = 1.14, $p < 0.001$). The third and final model, which incorporates all of the predictors from Models 1 and 2 into a single ordered logistic regression equation, shows little by way of substantial differences from the first two.

Religious Involvement, Social Capital, and Changes in Postmigration Physical Health

The third set of analyses (summarized in Table 5.3) included in this chapter use a series of ordered logistic regression models to test for an association between social capital generated in a religious context and a postmigration change in health net of demographic controls, immigration experiences, and other forms of social capital. Model 1 once again includes as independent variables measures of religious involvement, demographic control variables, and immigration experiences. Both religious service attendance (odds ratio = 1.16, $p < 0.01$) and identifying as a member of a religious denomination (odds ratio = 1.23, $p < 0.01$) display positive, statistically significant associations with postmigration health. In other words, those who attend religious services at least once per month and/or identify as a member of a religious denomination have greater odds of being in a higher category relative to a lower category (i.e., either maintaining or improving upon premigration health status) than those who do not. Belonging to a religious congregation, in contrast, shows no significant association with a change in postmigration health.

Regarding the demographic control variables, full-time employment has a negative, statistically significant relationship with postmigration health (odds ratio = 0.84, $p < 0.01$), which suggests that the odds of being in a higher category are lower for immigrants who work full-time than they are for those who either work part-time or are unemployed. Being male, meanwhile, shows a positive and statistically significant relationship with postmigration health, such that men have greater odds of either maintaining or improving their premigration health than do women (odds ratio = 1.17, $p < 0.01$). Neither age nor age squared is statistically significant, while he odds ratio for education (odds ratio = 0.97, $p < 0.001$) is statistically significant, but its value suggests only a negligible association with health. The association between marriage and a change in postmigration health is not statistically significant, nor are any of the dummy variables for visa category. Of the dummy variables denoting area of origin, only that for South/East Asia is statistically significant, and its value (odds ratio = 1.29, $p < 0.01$) suggests an advantage over Europeans/Central Asians in terms of the odds of maintaining or improving health after migrating to the U.S.

Despite swapping the religious involvement variables for measures of social capital, Model 2 shows few remarkable findings. None of the social capital variables are statistically significant, and the various measures designed to capture aspects of the immigration experience are as impotent in this model as they were in Model 1. The lone exception to this underwhelming trend is marital status, which gains statistical significance in this configuration of variables. Somewhat surprisingly, the association between being married and a change in postmigration health is negative;

those who are married or living in a marriage-like relationship have lower odds of being in a higher category versus a lower category than do those who are not married.

Model 3 combines all of the independent variables from Models 1 and 2. With the exception of political involvement, which gains statistical significance when considered in the context of the full model (odds ratio = 1.05, $p < 0.05$), the final model displays few noteworthy differences from the previous models. Importantly, the dummy variable indicative of being married remains statistically significant ($p < 0.05$), though the effect size decreased slightly from 0.89 to 0.90.

Religious Involvement, Social Capital, and Depression

The fourth set of analyses (summarized in Table 5.4) uses a series of logistic regression models to test for an association between the predictors outlined above and the presence/absence of postmigration depressive symptomology. As was the case above, Model 1 includes measures of religious involvement, visa category, and immigration experiences as independent variables. Somewhat unexpectedly, none of the religious involvement variables show any statistically significant association with depression. An examination of the demographic control variables, however, reveals that the odds of experiencing a postmigration depressive episode are lower for full-time workers (odds ratio = 0.83, $p < 0.05$) than for part-time workers or the unemployed, for men (odds ratio = 0.70, $p < 0.001$) relative to women and for married immigrants (odds ratio = 0.72, $p < 0.001$) compared to single, divorced or widowed immigrants. Educational attainment also appears to be protective (odds

ratio = 0.97, $p < 0.001$), while neither age nor age squared is significantly associated with depressive symptomology.

An examination of visa categories and area of origin also reveals noteworthy findings. Again using family visa recipients as the reference group, this model shows that employment visas are associated with lower odds of having experienced a post-migration depressive episode compared to the reference group (odds ratio = 0.76, $p < 0.05$), while humanitarian visas are associated greater odds of same (odds ratios = 1.70, $p < 0.001$ in both cases). Moreover, this model suggests that immigrants from Latin America/the Caribbean (odds ratio = 1.72, $p < 0.001$) and South America (odds ratio = 3.15, $p < 0.001$) have significantly greater odds of having experienced a depressive episode than do immigrants from Europe/Central Asia.

Model 2 once again trades the measures of postmigration religious involvement for those designed to capture postmigration social capital while leaving the other variables in place. With the exception of the odds ratio associated with full-time employment, which loses statistical significance, the effect of this switch on the odds ratios of the variables included in the previous model is largely negligible. Of the social capital variables, only belonging to a union (odds ratio = 1.36, $p < 0.05$) and political involvement (odds ratio = 0.93, $p < 0.05$) are significantly associated with having experienced a postmigration depressive episode. The third model, which combines all of the aforementioned predictors, shows few noteworthy changes, though the odds ratio for full-time employment did regain the statistical significance it lost in Model 2.

Religious Involvement, Social Capital, and Obesity

The fifth and final set of analyses (Summarized in Table 5.5) builds on the previous models by testing for an association between religion, social capital, and obesity. Following the same pattern as the other analyses, Model 1 includes the measures of religious involvement along with demographic controls, visa category, and area of origin. Of the religion-centric variables, only regular religious service attendance is associated with obesity (odds ratio = 0.83, $p < 0.05$); individuals who attend religious services at least once per month have significantly lower odds of being obese than do those who do not. Being male is negatively associated with obesity (odds ratio = 0.67, $p < 0.001$), as is education (odds ratio = 0.94, $p < 0.001$), while age shows the opposite effect (odds ratio = 1.07, $p < 0.001$). Full-time employment and marital status, in contrast, display no significant association with obesity. Of the visa categories examined, only humanitarian visa recipients (odds ratio = 1.64, $p < 0.001$) and legalization visa recipients (odds ratio = 1.26, $p < 0.05$) are significantly related to obesity, and both groups find themselves at a disadvantage relative to family visa recipients. Regarding area of origin, immigrants from South/East Asia, Latin America/the Caribbean, and Sub-Saharan Africa all demonstrate significant associations with obesity, but there is considerable variation in terms of directionality and effect size. Those from South/East Asia have significantly lower odds of being obese compared to the reference group, while those from Latin America/the Caribbean and Sub-Saharan Africa have significantly greater odds of same.

Model 2 exchanges the measures of religious involvement for measures of non-religious social capital, but the model itself shows very little change as a result. The odds ratios associated with the respondents' demographic characteristics, visa categories, and areas or origin are virtually identical to what they were in Model 1, though having children in the home does demonstrate a positive association with the odds of being obese. Finally, Model 3 incorporates all of the independent variables from the previous two models. Monthly religious service attendance retains its statistical significance when incorporated into the final model, but having children in the home does not.

Discussion and Conclusion

This chapter set out to answer three fundamental research questions. Having already established that migrant health waxes and wanes over the course of the migration process, we sought to examine the extent to which religious social capital—defined here as a combination of religious service attendance, identifying as a member of a religious denomination, and belonging to a religious congregation—contributed to the improvement and/or maintenance of migrant health. Second, we wanted to see whether this relationship extended to postmigration mental health in addition to postmigration physical health. Finally, we sought to test whether any association between religious involvement and health would persist after controlling for demographic characteristics and nonreligious forms of social capital. The following sections address each of these research questions, offer potential directions for future research, and note the limitations of these sets of analyses.

Religion's Association with Migrant Physical Health

Regarding the question of whether or not religious social capital is associated with health over the course of the migration process, the answer is a qualified yes. Regardless of which health outcome is considered, some aspect of religious social capital shows a statistically significant relationship with it. The only hang-up is the fact that different aspects of religious social capital that are statistically significant in one model may show no effect whatsoever in another, and vice versa. But given the obstinacy with which the relationship between religion and health has defied simple description, it is perhaps unsurprising that the aforementioned series of analyses should yield a picture of the religion/health connection that is at first blush counterintuitive, contradictory, and incongruous. Far from being contradictory, however, we argue that the seemingly divergent findings detailed in the previous section simply underscore the importance of social context in understanding the relationship between religion, social support, and health.

Regarding premigration health, identifying oneself as a member of a religious denomination is significantly associated with greater odds of being in better health, while regular religious service attendance shows no association whatsoever. Yet both pre- and postmigration religious service attendance clearly play a role in post-migration health; those respondents' whose health improved since migrating to the U.S. reported the highest rates of religious service attendance prior to migrating and showed the smallest postmigration decline in same. The explanation for this apparent contradiction may lie in the religious and cultural milieus of the migrants'

respective countries of origin. Compared to the United States, many of the countries of origin represented in the NIS dataset are religiously monochromatic (Pew Research Religious and Public Life Project, 2013). In a population where one faith holds what amounts to a religious monopoly, actually attending religious services may not be necessary to enjoy access to the beneficial social ties that often accompany such a behavior. However, in a more religiously diverse context such as the United States, religious service attendance—and the social networks fostered therein—may play a much larger role as a determinant of health. While this hypothesis has not yet been tested in a preimmigration context, there is some empirical evidence to suggest that religious market density (i.e., the percentage of individuals in a given area who belong to the same religion) contributes to a number of positive outcomes among adherents, including lower rates of physical disability (Gruber, 2005) and illicit drug use (Mellor & Freeborn, 2010).

Also of interest is the fact that belonging to a religious congregation in the U.S. displays a negative association with postmigration health, an association that may be due to the characteristics of the congregations in question and the type of social capital existing therein. Supplementary analyses, however, show that a relatively small portion of the NIS sample reports belonging to a religious congregation (just 21.21%), and the congregations to which they belong tend to be composed primarily of immigrants (62.17% of those who belong to a congregation belong to one where immigrants from their home countries constitute a majority). Turning again to social capital for an explanation, we suspect that such congregations serve as repositories

for bonding, rather than bridging social capital. As Putnam (2002) explains, "bonding social capital brings together people who are like one another in important respects (ethnicity, age, gender, social class, and so on), whereas bridging social capital refers to social networks that bring together people who are unlike one another" (p.18). The distinction between the two is important, as the former "is at greater risk of producing negative externalities," while the "external effects of bridging networks are likely to be positive" (Putman, 2002, p. 20). Given that many of the social ties established in religious congregations where the majority of parishioners are immigrants are perhaps unlikely to extend beyond the immigrant community, the fact that membership in such a congregation is slightly disadvantageous to health is not entirely unexpected.

Finally, these analyses suggest that religious service attendance and identifying as a member of a religious denomination are shown to be positively associated with improved postmigration health, which is curious considering neither was associated with postmigration self-rated health in the second set of analyses. One possible interpretation is that the social influence of faith-based networks actually improves health, perhaps by modifying health behaviors. Such a phenomenon is not without precedent; Seybold and Hill (2001), for example, speculated that renewed religious conviction may lead individuals to adopt better health-related behaviors, which in turn leads to better health. A more conservative interpretation of this finding is that religious social capital simply protects against a decline in health, possibly by offering some type of social support and/or engagement. Again, neither of these explanations

has been tested in a postmigration context, so additional research will be necessary to identify the specific pathways through which religious involvement contributes to improved postmigration health.

Religion's Association with Mental Health

As to the question of whether the association between social integration of the religious variety and health is limited to physical health outcomes, the answer appears to be a qualified yes, as the third set of analyses demonstrate no relationship whatsoever between any of the variables designed to measure religious involvement and the odds of having experienced a postmigration depressive episode lasting 2 weeks or longer. It bears mentioning, however, that depression represents but one facet of mental health; were a more comprehensive set of mental health outcomes available for analysis we would have been able to address the question of a "mentally healthy migrant effect" much more thoroughly. Furthermore, linguistic and cultural differences in what is meant by "depressed, sad, or blue" may have influenced the respondents' answers to the question.

Religion, Social Capital, and Health

Regarding the final research question, it appears as though the relationship between religious involvement and health cannot be explained away by the inclusion of nonreligious forms of social capital. Indeed, the inefficacy of the various measures of nonreligious social integration as predictors of health in either the pre- or postmigration context is in itself somewhat puzzling. This null finding may be due to

problems with the conceptualization and operationalization of social capital within the NIS data. One of this study's significant limitations has to do with the inability to measure social capital consistently over time. While the New Immigrant Survey contains a considerable amount of information on the extent to which respondents were involved with voluntary associations in their respective countries of origin, no such questions were asked regarding their postmigration lives. As a result, with the exception of union membership, there is very little overlap between the premigration and postmigration measures of social capital. A more consistent measurement of social capital across time would have at least allowed for an assessment of the change in social engagement over the course of the migration process, even had it not yielded a more robust predictor of physical and/or mental health. Another possibility is new immigrants occupy a unique social space in American society, and none of the measures contained in the NIS dataset capture the type or types of social capital available to them.

Having said that, it is worth noting that the respondents who described themselves as having experienced a decline in health since migrating to the U.S. reported much higher levels of premigration social engagement than those whose health either improved or stayed the same, which hints at a relationship between the severance of social ties and poorer health. Also, political involvement proved to be associated with good/improved physical and mental health across several different models, though the extent to which this variable truly measures social engagement as opposed to affluence or some combination of the two is somewhat debatable.

Table 5.1: Religion, Social Capital, and Premigration Physical Health

	Model 1	Model 2	Model 3
Religious Variables			
Attends at Least Monthly	0.93		0.92
	(0.05)		(0.05)
Identifies with a Denomination	1.29***		1.31***
	(0.09)		(0.08)
Demographic Variables			
Works Full-Time	1.09	1.10	1.10
	(0.05)	(0.05)	(0.05)
Male	1.28***	1.26***	1.27***
	(0.06)	(0.06)	(0.06)
Age	1.01	1.01	1.01
	(0.01)	(0.01)	(0.01)
Age Squared	1.00***	1.00***	1.00***
	(0.01)	(0.01)	(0.01)
Education	1.06***	1.06***	1.06***
	(0.01)	(0.01)	(0.01)
Married	0.96	0.95	0.95
	(0.04)	(0.01)	(0.04)
Area of Origin (Reference = Europe)			
South/East Asia	1.01	0.99	1.01
	(0.06)	(0.06)	(0.06)
North America	1.50**	1.45**	1.46*
	(0.22)	(0.22)	(0.22)
Latin America and the Caribbean	1.01	0.99	0.99
	(0.07)	(0.07)	(0.07)
Sub-Saharan Africa	1.92***	1.89***	1.89***
	(0.18)	(0.18)	(0.18)
Middle East/North Africa	1.35**	1.38**	1.36**
	(0.15)	(0.16)	(0.15)
Oceania	1.59	1.47	1.51
	(0.46)	(0.45)	(0.46)
South America	0.99	0.98	0.98
	(0.13)	(0.13)	(0.13)
Social Capital Variables			
Social Capital Index		1.02	1.02
		(0.01)	(0.01)
Standard errors in parentheses * p<.05, **p<.01, ***p<.001			

Table 5.2: Religion, Social Capital, and Postmigration Physical Health

	Model 1	Model 2	Model 3
Religious Variables			
Attends at Least Monthly	0.96		0.97
	(0.05)		(0.05)
Identifies with a Denomination	1.06		1.09
	(0.08)		(0.08)
Belongs to a Congregation	0.89*		0.88*
	(0.05)		(0.05)
Demographic Variables			
Works Full-Time	1.12*	1.09	1.10
	(0.06)	(0.05)	(0.06)
Male	1.40***	1.35***	1.34***
	(0.06)	(0.06)	(0.06)
Age	1.01	1.01	01.01
	(0.01)	(0.01)	(0.01)
Age Squared	1.00***	1.00***	1.00***
	(0.01)	(0.01)	(0.01)
Education	1.07***	1.06***	1.06***
	(0.01)	(0.01)	(0.01)
Married	0.97	0.99	1.00
	(0.07)	(0.05)	(0.05)
Visa Category (Reference = Family)			
Employment	1.10	1.01	1.04
	(0.07)	(0.07)	(0.07)
Diversity	1.12	1.11	1.12
	(0.09)	(0.08)	(0.08)
Humanitarian	0.56***	0.53***	0.54***
	(0.06)	(0.05)	(0.05)
Legalization	0.73**	0.67***	0.70***
	(0.07)	(0.06)	(0.06)
Area of Origin (Reference = Europe)			
South/East Asia	0.98	1.03	1.01
	(0.07)	(0.07)	(0.07)
North America	1.71***	1.68***	1.64**
	(0.26)	(0.25)	(0.25)
Latin America and the Caribbean	1.00	1.08	1.04
	(0.08)	(0.08)	(0.08)
Sub-Saharan Africa	1.97***	1.98***	1.96***
	(0.19)	(0.18)	(0.19)
Middle East/North Africa	1.29*	1.35**	1.29*
	(0.15)	(0.15)	(0.15)
Oceania	1.73	1.75	1.73
	(0.51)	(0.51)	(0.51)
South America	1.14	1.16	1.14
	(0.16)	(0.16)	(0.16)
Social Capital Variables			
Belongs to a Union		0.87	0.91
		(0.08)	(0.08)
Children in the Home		0.92	0.93
		(0.04)	(0.05)
Number of Adults in Household		0.97**	0.96**
		(0.01)	(0.01)
Political Involvement		1.14***	1.16***
		(0.03)	(0.03)
Standard errors in parentheses * $p<.05$, ** $p<.01$, *** $p<.001$			

Table 5.3: Religion and Social Capital as Predictors of a Postmigration Change in Health

	Model 1	Model 2	Model 3
Religious Variables			
Attends at Least Monthly	1.16**		1.16**
	(0.07)		(0.07)
Identifies with a Denomination	1.23**		1.21*
	(0.10)		(0.08)
Belongs to a Congregation	0.95		0.95
	(0.07)		(0.07)
Demographic Variables			
Works Full-Time	0.84**	0.85**	0.85**
	(0.05)	(0.05)	(0.06)
Male	1.17**	1.15***	1.15**
	(0.06)	(0.06)	(0.06)
Age	1.00	1.00	01.00
	(0.01)	(0.01)	(0.01)
Age Squared	1.00	1.00	1.00
	(0.01)	(0.01)	(0.01)
Education	0.97***	0.97***	0.97***
	(0.01)	(0.01)	(0.01)
Married	0.90	0.88*	0.89*
	(0.05)	(0.05)	(0.05)
Visa Category (Reference = Family)			
Employment	0.86	0.87	0.85*
	(0.07)	(0.07)	(0.07)
Diversity	1.18	1.21*	1.19*
	(0.09)	(0.10)	(0.09)
Humanitarian	1.07	1.00	1.06
	(0.13)	(0.11)	(0.13)
Legalization	1.18	1.18	1.16
	(0.13)	(0.12)	(0.13)
Area of Origin (Reference = Europe)			
South/East Asia	1.29**	1.28**	1.28**
	(0.07)	(0.11)	(0.11)
North America	1.27	1.18	1.26
	(0.22)	(0.20)	(0.22)
Latin America and the Caribbean	1.10	1.13	1.10
	(0.10)	(0.10)	(0.08)
Sub-Saharan Africa	0.92	0.95	0.90
	(0.10)	(0.10)	(0.19)
Middle East/North Africa	1.22	1.19	1.21
	(0.16)	(0.15)	(0.16)
Oceania	1.16	1.06	1.09
	(0.38)	(0.36)	(0.37)
South America	0.94	0.95	0.94
	(0.16)	(0.10)	(0.16)
Social Capital Variables			
Belongs to a Union		0.95	0.91
		(0.10)	(0.10)
Children in the Home		1.04	1.02
		(0.06)	(0.06)
Number of Adults in Household		1.02	1.01
		(0.01)	(0.01)
Political Involvement		1.04	1.05*
		(0.03)	(0.03)
Pseudo R Squared	0.02	0.02	0.02
Standard errors in parentheses * p<.05, ** p<.01, *** p<.001			

Table 5.4: Religion and Social Capital as Predictors of Postmigration Depression

	Model 1	Model 2	Model 3
Religious Variables			
Attends at Least Monthly	0.91		0.92
	(0.07)		(0.08)
Identifies with a Denomination	1.05		1.04
	(0.13)		(0.13)
Belongs to a Congregation	1.07		1.08
	(0.10)		(0.11)
Demographic Variables			
Works Full-Time	0.83*	0.87	0.84*
	(0.07)	(0.07)	(0.07)
Male	0.72**	0.73***	0.75***
	(0.06)	(0.06)	(0.06)
Age	1.04**	1.04**	01.04**
	(0.01)	(0.02)	(0.01)
Age Squared	1.00**	1.00**	1.00**
	(0.01)	(0.01)	(0.01)
Education	0.97**	0.98**	0.97**
	(0.01)	(0.01)	(0.01)
Married	0.73***	0.74***	0.72***
	(0.06)	(0.09)	(0.05)
Visa Category (Reference = Family)			
Employment	0.76*	0.74*	0.75*
	(0.07)	(0.09)	(0.07)
Diversity	0.87	0.84	0.85
	(0.12)	(0.11)	(0.11)
Humanitarian	1.70***	1.47**	1.65**
	(0.25)	(0.20)	(0.21)
Legalization	1.02	1.05	1.06
	(0.13)	(0.13)	(0.14)
Area of Origin (Reference = Europe)			
South/East Asia	0.89	0.91	0.90
	(0.12)	(0.12)	(0.13)
North America	1.40	1.36	1.44
	(0.37)	(0.36)	(0.38)
Latin America and the Caribbean	1.72***	1.76***	1.74***
	(0.23)	(0.23)	(0.24)
Sub-Saharan Africa	1.20	1.29	1.25
	(0.20)	(0.21)	(0.21)
Middle East/North Africa	1.37	1.36	1.21
	(0.26)	(0.26)	(0.16)
Oceania	1.27	1.35	1.32
	(0.62)	(0.66)	(0.65)
South America	3.15***	3.02***	3.17***
	(0.61)	(0.58)	(0.62)
Social Capital Variables			
Belongs to a Union		1.36*	1.34*
		(0.20)	(0.21)
Children in the Home		0.94	0.97
		(0.07)	(0.08)
Number of Adults in Household		1.00	0.99
		(0.02)	(0.01)
Political Involvement		0.93*	0.91**
		(0.03)	(0.03)
Standard errors in parentheses * $p<.05$, ** $p<.01$, *** $p<.001$			

Table 5.5: Religion and Social Capital as Predictors of Obesity

	Model 1	Model 2	Model 3
Religious Variables			
Attends at Least Monthly	0.83*		0.81**
	(0.06)		(0.06)
Identifies with a Denomination	1.03		1.06
	(0.12)		(0.13)
Belongs to a Congregation	1.17		1.18
	(0.11)		(0.11)
Demographic Variables			
Works Full-Time	0.89	0.91	0.90
	(0.07)	(0.07)	(0.07)
Male	0.67***	0.69***	0.69***
	(0.05)	(0.05)	(0.05)
Age	1.07***	1.07***	01.07***
	(0.02)	(0.02)	(0.02)
Age Squared	1.00***	1.00***	1.00***
	(0.01)	(0.01)	(0.01)
Education	0.94***	0.94***	0.94***
	(0.01)	(0.01)	(0.01)
Married	0.94	0.90	0.90
	(0.13)	(0.07)	(0.07)
Visa Category (Reference = Family)			
Employment	1.07	1.02	1.09
	(0.13)	(0.12)	(0.13)
Diversity	0.97	0.95	0.97
	(0.12)	(0.12)	(0.13)
Humanitarian	1.64***	1.62***	1.63***
	(0.23)	(0.21)	(0.23)
Legalization	1.26*	1.25*	1.25*
	(0.14)	(0.14)	(0.14)
Area of Origin (Reference = Europe)			
South/East Asia	0.56***	0.54***	0.55***
	(0.08)	(0.07)	(0.08)
North America	1.43	1.47	1.50
	(0.34)	(0.35)	(0.36)
Latin America and the Caribbean	2.12***	2.09***	2.11***
	(0.27)	(0.26)	(0.27)
Sub-Saharan Africa	1.51**	1.64***	1.54**
	(0.23)	(0.24)	(0.24)
Middle East/North Africa	1.35	1.39	1.38
	(0.25)	(0.25)	(0.26)
Oceania	0.78	0.89	0.88
	(0.62)	(0.66)	(0.48)
South America	1.30	1.18	1.29
	(0.28)	(0.26)	(0.29)
Social Capital Variables			
Belongs to a Union		1.18	1.18
		(0.17)	(0.17)
Children in the Home		1.18*	1.13
		(0.09)	(0.09)
Number of Adults in Household		1.03	1.03
		(0.02)	(0.02)
Political Involvement		0.96	0.95
		(0.04)	(0.04)
Standard errors in parentheses * $p<.05$, ** $p<.01$, *** $p<.001$			

CHAPTER VI

CONCLUSIONS AND FUTURE RESEARCH

In addition to making up more than 13% of the people living in the United States, immigrants are among the fastest-growing segments of the American populace (Holmes, 2006). Indeed, immigration now accounts for nearly one-third of U.S. population growth (NIS, 2003). Furthermore, the shift in U.S. immigration policy that began in 1965 has yielded an immigrant stock that is significantly more racially, ethnically, and culturally diverse than any in American history (Jasso et al., 2004). Whereas pre-1965 migration policy favored white, Western-European Protestants, post-1965 immigrants come from countries all over the world, speak a variety of languages and show much more variability in the religious beliefs they profess.

Given the importance of immigrants to the economic and cultural future of the United States, it is little wonder that the turn of the 21st century has brought with it an increased interest in understanding the causes, consequences, and caveats of migration. Princeton's New Immigrant Survey in particular represents considerable progress in terms of our ability to study the impact of the migration process on the migrants themselves, as it is among the first attempts to collect data on such topics as employment, acculturation, social integration, religion, and health from a nationally representative population of recent immigrants to the United States.

This project sought to contribute to the growing body of literature on recent immigrants by examining the effect of the migration process in three critical areas: religious involvement, social integration, and health. The following paragraphs summarize the contributions made by this project by providing an overview of its results, noting some of its limitations and providing recommendations for future research.

Review of Study Results

The first analytical section of this project set out to examine the effect of the migration process on postmigration religious service attendance. More specifically, we sought to answer three primary research questions. First, is religious service attendance likely to increase as a result of migration, as predicted by Warner (1998)? Or is it more likely to decrease, as others have observed (i.e., Connor, 2009)? Second, what effect, if any, does migrating with one's family have on postmigration religious service attendance? Finally, does gender play a role in determining postmigration religious service attendance?

Contrary to we might expect based in the research of Smith (1978) and Warner (1998), the analyses in Chapter III showed a precipitous and virtually universal decline in religious service attendance. Far from serving as an evangelizing experience, the migration process appeared to have the opposite effect. Furthermore, family had no significant association with postmigration religious service attendance, and men showed significantly lower odds of attending religious services at least once per month than did women. This last finding was somewhat unexpected, as Chai

(1997) and others have argued that immigrant men in particular find participation in religious services attractive.

The second analytical section sought to test for the existence of a healthy migrant effect—that is, the oft-debated tendency for immigrants to a given developed country to be, on average, healthier than the native-born despite the fact that they often migrate from developing countries with comparatively high rates of morbidity and mortality—across a variety of different health outcomes while also controlling for confounding factors such as visa category and area of origin. The results suggest that not all immigrants are equally likely to exhibit the robust health that is often associated with the healthy migrant effect. On the contrary, some groups, such as humanitarian and legalization visa recipients, proved to be disadvantaged across a variety of health outcomes. If nothing else, this study showed that the main question regarding the healthy migrant effect should not simply be whether or not it exists, but for whom and under what circumstances is it most likely to be observed.

The final analytical section attempted to build on Chapter IV's findings by adding religious involvement and nonreligious forms of social capital to the debate over the healthy migrant effect. Furthermore, we sought to test whether any association between religion and health would persist after controlling for other forms of social capital. Globally, religion proved to be associated with a wide range of physical health outcomes (premigration health, postmigration health, changes in postmigration health, and obesity), but showed no such association with the lone measure of mental health. Slightly puzzling, however, is the fact that no one facet of

religious involvement was consistently associated with all four physical health outcomes, as was the overall lack of significance of the measures of social capital, save for the political involvement index.

Limitations and Recommendations

The findings offered in this study must be understood in the context of several limitations. First, the analyses shown in Chapter III were unable to control for potentially confounding contextual effects in the respondents' areas of residence. A number of contextual factors—religious pluralism and religious market saturation, among others—have been shown to have an effect on the frequency of religious service attendance (Connor, 2009). However, because the publicly available version of the NIS dataset contains no geographical data whatsoever, we were unable to consider contextual factors in our analyses. If nothing else, the addition of such contextual variables may have contributed to a more nuanced view of the effect of migration on religious service attendance.

The second major limitation has to do with the available health outcomes. Some, such as self-rated health, are undeniably subjective, while others, such as BMI and/or diagnoses of chronic diseases, assume access to healthcare and therefore run the risk of underestimating the prevalence of such conditions in America's immigrant population. Particularly egregious in this case is the lone available measure of mental health, which deals only with the presence/absence of depressive symptomology without addressing duration or severity. Future studies would do well to incorporate

a wider array of physical and mental health outcomes with an eye toward maximizing validity, reliability, and generalizability.

The third and final major limitation of this project has to do with its measures of social capital. Although the New Immigrant Survey incorporated accepted measures of formal and informal social capital into its research on the respondents' pre- and postmigration lives, it largely failed to capture either set of measures at both time points. As a result, tracking social integration over the course of the migration process becomes effectively impossible. Future research in this vein would do well to utilize identical pre- and postmigration measures of social capital in order to allow for a better look at how the migration process might affect social integration, acculturation, and assimilation.

Conclusion

In spite of these limitations, this study provides a detailed look at the complex relationship between religious service attendance, social integration, and health in the context of the migration process. This convergence warrants future study, as a better understanding of all three factors promises to be conducive to a more meaningful and socially connected life for America's immigrant population.

REFERENCES

Abraido-Lanza, A. F., Dohrenwend, B. P., Ng-Mak, D. S., & Turner, J. B. (1999). The Latino mortality paradox: A test of the" salmon bias" and healthy migrant hypotheses. *American Journal of Public Health*, *89*(10), 1543-1548.

Abraído-Lanza, A. F., Armbrister, A. N., Flórez, K. R., & Aguirre, A. N. (2006). Toward a theory-driven model of acculturation in public health research. *American Journal of Public Health*, *96*(8), 1342-1346.

Akee, R. (2010). Who leaves? Deciphering immigrant self-selection from a developing country. *Economic Development and Cultural Change*, *58*(2), 323-344.

Akresh, I. R., & Frank, R. (2008). Health selection among new immigrants. *American Journal of Public Health*, *98*(11), 20-58.

Almedom, A. M., & Glandon, D. (2008). Social capital and mental health. In I. Kawachi, S. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 191-214). New York: Springer.

Arcury, T. A., Grzywacz, J. G., Chen, H., Mora, D. C., & Quandt, S. A. (2014). Work organization and health among immigrant women: Latina manual workers in North Carolina. *American Journal of Public Health*, *104*(12), 2445-2452.

Badr, H. (2000). Al-Noor mosque: Strength through unity. In H. Ebaugh & J. Chafetz (Eds.), *Religion and the new immigrants: Continuities and adaptations in immigrant Congregations* (pp. 193-227). Walnut Creek, CO: Altamira.

Berger, P. L. (1967). *The sacred canopy: elements of a sociological theory of religion*. New York: Springer.

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine*, *51*(6), 843-857.

Beyers, J. M., Bates, J. E., Pettit, G. S., & Dodge, K. A. (2003). Neighborhood structure, parenting processes, and the development of youths' externalizing behaviors: A multilevel analysis. *American Journal of Community Psychology*, *31*(1-2), 35-53.

Bhugra, D. (2004). Migration and mental health. *Acta Psychiatrica Scandinavica*, *109*(4), 243-258.

Blue, L., & Fenelon, A. (2011). Explaining low mortality among US immigrants relative to native-born Americans: The role of smoking. *International Journal of Epidemiology*, *40*(3), 786-793.

Blum, R. N., Polish, L. B., Tapy, J. M., Catlin, B. J., & Cohn, D. L. (1993). Results of screening for tuberculosis in foreign-born persons applying for adjustment of immigration status. *CHEST Journal*, *103*(6), 1670-1674.

Bourdieu, P. (2011). The forms of capital. In I. Szeman & T. Kaposy (Eds.), *Cultural theory: An anthology* (pp. 81-93). Malden, MA: Wiley-Blackwell.

Bostean, G. (2013). Does selective migration explain the Hispanic paradox? A comparative analysis of Mexicans in the US and Mexico. *Journal of Immigrant and Minority Health*, *15*(3), 624-635.

Cadge, W., & Howard Ecklund, E. (2007). Immigration and religion. *Annual Review of Sociology*, *33*, 359-379.

Campbell, D. E., & Yonish, S. J. (2003). Religion and volunteering in America. In E. Smidt (Ed.), *Religion as social capital: Producing the common good* (pp. 87-106). Waco, TX: Baylor University Press.

Chai, K. J. (1998). Competing for the second generation: English-language ministry at a Korean Protestant church. In S. Warner (Ed.), *Gatherings in diaspora: Religious communities and the new immigration* (pp. 295-331). Philadelphia, PA: Temple University Press.

Chaves, M., & Tsitsos, W. (2001). Congregations and social services: What they do, how they do it, and with whom. *Nonprofit and Voluntary Sector Quarterly*, *30*(4), 660-683.

Cheong, P. H., Edwards, R., Goulbourne, H., & Solomos, J. (2007). Immigration, social cohesion and social capital: A critical review. *Critical Social Policy*, *27*(1), 24-49.

Chen, Y. Y., & Contrada, R. J. (2007). Religious involvement and perceived social support: Interactive effects on cardiovascular reactivity to laboratory stressors. *Journal of Applied Biobehavioral Research*, *12*, 1–12.

Chou, K. L. (2009). Pre-migration planning and depression among new migrants to Hong Kong: The moderating role of social support. *Journal of Affective Disorders*, *114*(1), 85-93.

Cnaan, R. A., Boddie, S. C., & Yancey, G. I. (2003). Bowling alone but serving together. In E. Smidt (Ed.), *Religion as social capital. Producing the common good* (pp. 19-31). Waco, TX: Baylor University Press.

Cole, T. J., Bellizzi, M. C., Flegal, K. M., & Dietz, W. H. (2000). Establishing a standard definition for child overweight and obesity worldwide: International survey. *BMJ*, *320*(7), 1240.

Coleman, J. A. (2003). Religious social capital: Its nature, social location, and limits. In E. Smidt (Ed.), *Religion as Social capital: Producing the Common Good* (pp. 33-48). Waco, TX: Baylor University Press.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, *94*, S95-S120.

Coleman, J.S. (1990). *Foundations of social theory*. Cambridge, MA: Harvard University Press.

Comstock, G. W. (1971). Fatal arteriosclerotic heart disease, water hardness at home, and socioeconomic characteristics. *American Journal of Epidemiology*, *94*(1), 1-10.

Comstock, G. W., & Partridge, K.B. (1972). Church attendance and health. *Journal of Chronic Disease, 25*, 665–72.

Connor, P. (2009, December). International migration and religious participation: The mediating impact of individual and contextual effects. *Sociological Forum 24*(4), 779-803.

Corlin, L., Woodin, M., Thanikachalam, M., Lowe, L., & Brugge, D. (2014). Evidence for the healthy immigrant effect in older Chinese immigrants: A cross-sectional study. *BMC Public Health*, *14*(1), 603.

Cotton, S., Zebracki, K., Rosenthal, S. L., Tsevat, J., & Drotar, D. (2006). Religion/spirituality and adolescent health outcomes: A review. *Journal of Adolescent Health*, *38*(4), 472-480.

Crimmins, E. M., Kim, J. K., Alley, D. E., Karlamangla, A., & Seeman, T. (2007). Hispanic paradox in biological risk profiles. *American Journal of Public Health*, *97*(7), 1305-1310.

Cunningham, S. A., Ruben, J. D., & Narayan, K. V. (2008). Health of foreign-born people in the United States: A review. *Health & Place*, *14*(4), 623-635.

Davies, A. A., Basten, A., & Frattini, C. (2006). A social determinant of migrants' health. *Epidemiology and Community Health*, *60*, 424-26.

DeMaris, A. (1995). A tutorial in logistic regression. *Journal of Marriage and the Family*, *57*(4), 956-968.

Dillon, M. (Ed.). (2003). *Handbook of the sociology of religion*. Cambridge, UK. Cambridge University Press.

Durand, J., & Massey, D. S. (1992). Mexican migration to the United States: A critical review. *Latin American Research Review*, *27*(2), 3-42.

Durkheim, E. (1951). *Suicide: A study in sociology*. (J.A. Spaulding and G. Simpson, Trans). Glencoe, IL: The Free Press.

Dwyer, J.W., Clarke, L.L. & Miller, M.K. 1990. The effect of religious concentration and affiliation on county cancer mortality rates. *Journal of Health and Social Behavior, 31*, 185-202.

Ebaugh, H. R. (2003). Religion and the new immigrants. In M. Dillon (Ed.), *Handbook of the sociology of religion* (pp. 225-239). Cambridge, UK: Cambridge University Press.

Ellison, C. G., & George, L. K. (1994). Religious involvement, social ties, and social support in a southeastern community. *Journal for the Scientific Study of Religion*, *33(1)*, 46-61.

Ellison, C.G., & Levin, J.S. 1998. The religion-health connection: Evidence, theory, and future directions. *Health Education and Behavior*, *25*, 700-720.

Fine, B. (1999). The developmental state is dead—long live social capital?. *Development and Change*, *30*(1), 1-19.

Foley, M. W., & Hoge, D. R. (2007). *Religion and the new immigrants: How faith communities form our newest citizens*. Oxford, UK: Oxford University Press.

Frank, L., Kavage, S., & Litman, T. (2006). *Promoting public health through smart growth*. Vancouver. Smart Growth BC. Retrieved from http://www.smartgrowth.bc.ca/

Fraser, G. E. (1999). Associations between diet and cancer, ischemic heart disease, and all-cause mortality in non-Hispanic white California Seventh-day Adventists. *The American Journal of Clinical Nutrition*, *70*(3), 532s-538s.

Frisbie, W. P., Cho, Y., & Hummer, R. A. (2001). Immigration and the health of Asian and Pacific Islander adults in the United States. *American Journal of Epidemiology*, *153*(4), 372-380.

George, S. (1998). Caroling with the Keralites: The negotiation of gendered space in an Indian immigrant church. In R. Warner & J. Wittner (Eds.), *Gatherings in diaspora: Religious communities and the new immigration* (pp. 265-294). Philadelphia, PA: Temple University Press.

George, L. K., Ellison, C. G., & Larson, D. B. (2002). Explaining the relationships between religious involvement and health. *Psychological Inquiry*, *13*(3), 190-200.

Graham, T. W., Kaplan, B. H., Cornoni-Huntley, J. C., James, S. A., Becker, C., Hames, C. G., & Heyden, S. (1978). Frequency of church attendance and blood pressure elevation. *Journal of Behavioral Medicine*, *1*(1), 37-43.

Gruber, J. H. (2005). Religious market structure, religious participation, and outcomes: Is religion good for you? *Advances in Economic Analysis & Policy*, *5*(1), 63.

Hadaway, C. K., Marler, P. L., & Chaves, M. (1998). Overreporting church attendance in America: Evidence that demands the same verdict. *American Sociological Review*, *63*(1), 122-130.

Hagan, J., & Ebaugh, H. R. (2003). Calling upon the sacred: migrants' use of religion in the migration process. *International Migration Review*, *37*(4), 1145-1162.

Hayes, M. V., & Dunn, J. R. (1998). *Population health in Canada: A systematic review*. Ottawa: Canadian Policy Research Networks.

Harpham, T. (2008). The measurement of community social capital through surveys. In I. Kawachi, S.V. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 51-62). New York: Springer.

Herberg, W. (1960). *Protestant Catholic Jew*. Chicago, IL: University of Chicago Press.

Hill, P. C., & Pargament, K. I. (2008). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *Psychology of Religion and Spirituality*, *5(1)*, 3-17,

Holmes, S. M. (2006). An ethnographic study of the social context of migrant health in the United States. *PLoS Medicine*, *3*(10), e448.

Hovey, J. D., & Magaña, C. (2000). Acculturative stress, anxiety, and depression among Mexican immigrant farmworkers in the Midwest United States. *Journal of Immigrant Health*, *2*(3), 119-131.

Hummer, R. A., Powers, D. A., Pullum, S. G., Gossman, G. L., & Frisbie, W. P. (2007). Paradox found (again): Infant mortality among the Mexican-origin population in the United States. *Demography*, *44*(3), 441-457.

Huynh, T. (2000). Center for Vietnamese Buddhism: Recreating home. In H. Ebaugh & J. Chafetz (Eds.), *Religion and the new immigrants: Continuities and adaptations in immigrant congregations* (pp. 163-179). Walnut Creek, CO: Altamira.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2004). The US New Immigrant Survey: Overview and preliminary results based on the new-immigrant cohorts of 1996 and 2003. In B. Morgan & B. Nicholson (Eds.), *Longitudinal surveys and cross-cultural survey design* (pp. 18-28). London, UK: Crown Publishing.

Kao, G. (2004). Social capital and its relevance to minority and immigrant populations. *Sociology of Education, 77*, 172–83.

Kawachi, I., & Berkman, L. (2000). Social cohesion, social capital, and health. In L. Berkman & I. Kawachi (Eds.), *Social epidemiology* (pp. 174-190). New York: Oxford University Press USA.

Kawachi, I., & Kennedy, B. P. (1997). The relationship of income inequality to mortality: Does the choice of indicator matter? *Social Science & Medicine*, *45*(7), 1121-1127.

Kawachi, I., Kennedy, B. P., & Glass, R. (1999). Social capital and self-rated health: A contextual analysis. *American Journal of Public Health*, *89*(8), 1187-1193.

Kawachi, I., Subramanian, S. V., & Kim, D. (2008). *Social capital and health*. New York: Springer.

Kennedy, S., McDonald, J. T., & Biddle, N. (2006). The healthy immigrant effect and immigrant selection: Evidence from four countries. Social and Economic Dimensions of an Aging Population Research Papers, McMaster University, Retrieved from http://EconPapers.repec.org/RePEc:mcm:sedapp:164.

Kim, B. J., Sangalang, C. C., & Kihl, T. (2012). Effects of acculturation and social network support on depression among elderly Korean immigrants. *Aging & Mental Health*, *16*(6), 787-794.

Koenig, H. G., George, L. K., Cohen, H. J., Hays, J. C., Larson, D. B., & Blazer, D. G. (1998). The relationship between religious activities and cigarette smoking in older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *53*(6), 426-434.

Koenig, H. G., Hays, J. C., Larson, D. B., George, L. K., Cohen, H. J., McCullough, M. E., & Blazer, D. G. (1999). Does religious attendance prolong survival? A six-year follow-up study of 3,968 older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *54*(7), 370-376.

Koenig, L. B., & Vaillant, G. E. (2009). A prospective study of church attendance and health over the lifespan. *Health Psychology*, *28*(1), 117.

Koya, D. L., & Egede, L. E. (2007). Association between length of residence and cardiovascular disease risk factors among an ethnically diverse group of United States immigrants. *Journal of General Internal Medicine*, *22*(6), 841-846.

Kunitz, S. J. (2004). Social capital and health. *British Medical Bulletin*, *69*(1), 61-73.

Laroche, M. (2000). Health status and health services utilization of Canada's immigrant and non-immigrant populations. *Canadian Public Policy/Analyse de Politiques*, *47*(1) 51-75.

Lee, B. Y., & Newberg, A. B. (2005). Religion and health: A review and critical analysis. *Zygon*, *40*(2), 443-468

Levin, J. S., & Vanderpool, H. Y. (1987). Is frequent religious attendance really conducive to better health?: Toward an epidemiology of religion. *Social Science & Medicine*, *24*(7), 589-600.

Lindström, M. (2008). Social capital and health-related behaviors. In I. Kawachi, S.V. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 215-238). New York: Springer.

Markides, K. S., & Eschbach, K. (2005). Aging, migration, and mortality: Current status of research on the Hispanic paradox. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *60*(Special Issue 2), S68-S75.

Massey, D. S., & Espinosa, K. E. (1997). What's driving Mexico-US migration? A theoretical, empirical, and policy analysis. *American Journal of Sociology*, *102*(4), 939-999.

McDonald, J. T., & Kennedy, S. (2005). Is migration to Canada associated with unhealthy weight gain? Overweight and obesity among Canada's immigrants. *Social Science & Medicine*, *61*(12), 2469-2481.

McKeary, M., & Newbold, B. (2010) Barriers to care: The challenges for Canadian refugees and their health care providers. *Journal of Refugee Studies*, *23*(4), 523-545.

Mellor, J. M., & Freeborn, B. A. (2011). Religious participation and risky health behaviors among adolescents. *Health Economics*, *20*(10), 1226-1240.

Moore, S., Shiell, A., Hawe, P., & Haines, V. A. (2005). The privileging of communitarian ideas: Citation practices and the translation of social capital into public health research. *American Journal of Public Health*, *95*(8), 1330.

Nathenson, S. L., & Wen, M. (2012). Religiousness, physical activity and obesity among older cancer survivors: Results from the Health and Retirement Study 2000–2010. *The International Journal of Religion and Spirituality in Society*, *2*(3), 129.

Need, A., & De Graaf, N. D. (1996). 'Losing my Religion': A dynamic analysis of leaving the church in the Netherlands. *European Sociological Review*, *12*(1), 87-99.

Noh, S., & Avison, W. R. (1996). Asian immigrants and the stress process: A study of Koreans in Canada. *Journal of Health and Social Behavior*, *37*(2), 192-206.

Norusis, M. (2008). *SPSS 16.0 statistical procedures companion*. New York: Prentice Hall Press.

Palloni, A., & Arias, E. (2004). Paradox lost: Explaining the Hispanic adult mortality advantage. *Demography*, *41*(3), 385-415.

Pearlin, L. I., & Bierman, A. (2013). Current issues and future directions in research into the stress process. In C. Aneshensel, J. Phelan, & A. Bierman (Eds.), *Handbook of the Sociology of Mental Health* (pp. 325-340). Netherlands: Springer.

Pew Research Religious and Public Life Project, 2012-2013. Retrieved from http://www.pewforum.org/.

Phinney, J. S., Horenczyk, G., Liebkind, K., & Vedder, P. (2001). Ethnic identity, immigration, and well-being: An interactional perspective. *Journal of Social Issues*, *57*(3), 493-510.

Presser, S., & Stinson, L. (1998). Data collection mode and social desirability bias in self-reported religious attendance. *American Sociological Review*, *61*(1), 137-145.

Purdie-Vaughns, V., & Eibach, R. P. (2008). Intersectional invisibility: The distinctive advantages and disadvantages of multiple subordinate-group identities. *Sex Roles*, *59*(5-6), 377-391.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, *6*(1), 65-78.

Putnam, R. D. (2001). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Ralston, H. (1998). Identity reconstruction and empowerment of South Asian immigrant women in Canada, Australia, and New Zealand. In M. Cousineau (Ed.), *Religion in a changing world: Comparative studies in sociology* (pp. 29-38). Westport, CT: Praeger.

Rubalcava, L. N., Teruel, G. M., Thomas, D., & Goldman, N. (2008). The healthy migrant effect: New findings from the Mexican Family Life Survey. *American Journal of Public Health*, *98*(1), 78-84.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, *277*(5328), 918-924.

Santelli, J., Ott, M. A., Lyon, M., Rogers, J., Summers, D., & Schleifer, R. (2006). Abstinence and abstinence-only education: A review of US policies and programs. *Journal of Adolescent Health*, *38*(1), 72-81.

Sasaki, J. Y., & Kim, H. S. (2011). At the intersection of culture and religion: A cultural analysis of religion's implications for secondary control and social affiliation. *Journal of Personality and Social Psychology*, *101*(2), 401.

Schwadel, P. (2010). Age, period, and cohort effects on US religious service attendance: The declining impact of sex, southern residence, and Catholic affiliation. *Sociology of Religion 71*, 12-24.

Seeman, T. E., Kaplan, G. A., Knudsen, L., Cohen, R., & Guralnik, J. (1987). Social network ties and mortality among the elderly in the Alameda County Study. *American Journal of Epidemiology*, *126*, 714 –723.

Seybold, K. S., & Hill, P. C. (2001). The role of religion and spirituality in mental and physical health. *Current Directions in Psychological Science*, *10*(1), 21-24.

Shapiro, E. (2011). Religious involvement and Latino immigrant health. *Toward a Sociological Theory of Religion and Health*, *19*, 175.

Sinha, J. W., Cnaan, R. A., & Gelles, R. J. (2007). Adolescent risk behaviors and religion: Findings from a national study. *Journal of Adolescence*, *30*(2), 231-249.

Singh, G. K., & Siahpush, M. (2002). Ethnic-immigrant differentials in health behaviors, morbidity, and cause-specific mortality in the United States: An analysis of two national data bases. *Human Biology*, *71*(1), 83-109.

Smidt, C. E. (Ed.). (2003). *Religion as social capital: Producing the common good*. Waco, TX: Baylor University Press.

Smith, T. L. (1978). Religion and ethnicity in America. *The American Historical Review*, *83*(5) 1155-1185.

Smith, T. B., McCullough, M. E., & Poll, J. (2003). Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin*, *129*(4), 614.

Stark, O. (2004). On the economics of refugee flows. *Review of Development Economics*, *8*(2), 325-329.

Stevenson, H. C. (1998). Raising safe villages: Cultural-ecological factors that influence the emotional adjustment of adolescents. *Journal of Black Psychology*, *24*(1), 44-59.

Stewart, J., & Quinn, T.C. (2012). To include or exclude? A comparative study of state laws on in-state tuition for undocumented students in the U.S. *Texas Hispanic Journal of Law and Policy, 18*, 107-177.

Strang, A., & Ager, A. (2010). Refugee integration: Emerging trends and remaining agendas. *Journal of Refugee Studies*, *23*(4), 589-607.

Sullivan, K. (2000). St. Mary's Catholic Church: Celebrating domestic religion. In H. Ebaugh & J. Chafetz (Eds.), *Religion and the new immigrants: Continuities and adaptations in immigrant congregations* (pp. 125-140). Walnut Creek, CO: Altamira.

Van Tubergen, F. (2006). Religious affiliation and attendance among immigrants in eight western countries: Individual and contextual effects. *Journal for the Scientific Study of Religion*, *45*(1), 1-22.

Verba, S., Schlozman, K. L., Brady, H. E., & Brady, H. E. (1995). *Voice and equality: Civic voluntarism in American politics* (Vol. 4). Cambridge, MA: Harvard University Press.

Walsh, A. (1980). The prophylactic effect of religion on blood pressure levels among a sample of immigrants. *Social Science & Medicine. Part B: Medical Anthropology*, *14*(1), 59-63.

Warner, R. S. (1998). Religion and migration in the United States. *Social Compass*, *45*(1),

123-134.

Westman, J. A., Ferketich, A. K., Kauffman, R. M., MacEachern, S. N., Wilkins III, J. R., Wilcox, P. P., & Bloomfield, C. D. (2010). Low cancer incidence rates in Ohio Amish. *Cancer Causes & Control*, *21*(1), 69-75.

Welch, M. R., & Baltzell, J. (1984). Geographic mobility, social integration, and church attendance. *Journal for the Scientific Study of Religion*, *23*(1) 75-91.

Warner, R. S., & Wittner, J. G. (Eds.). (1998). *Gatherings in diaspora: Religious communities and the new immigration*. Philadelphia, PA: Temple University Press.

Yang, F., & Ebaugh, H. R. (2001). Transformations in new immigrant religions and their global implications. *American Sociological Review*, *66*(2), 269-288.